Introduction

Domestic violence (DV) is a major public health problem facing the human societies.[1] DV is defined as the act or menace of emotional, verbal, physical, or sexual violence with the intention of causing harm or practicing control and power over others.[1] The source of violence can be intimate partner, a family member, or an authority figure.[1] DV is classified into physical violence, sexual violence, emotional and psychological violence.[1] DV can cause direct or indirect physical, reproductive, psychosomatic, and psychological consequences,[3,4] such as fractures, menstrual disturbance, abortion, anxiety, insomnia, depression, and posttraumatic stress disorder have been reported in the literature.[3,5] At worst, it can be fatal or lead to suicide.[6] Low income, low education, unemployment, emotional dependence, young age of the women, and traditional norms that privilege men considered as risk factors for DV.[4,6] Early detection of signs of abuse, as well as the symptoms of psychological disorders secondary to abuse is critical and, in many cases, can be detected in the primary care setting.

ABSTRACT

Aims: The aim of this study was to evaluate the impact of domestic violence on depression among females’ students of Imam Abdulrahman bin Faisal University in the Kingdom of Saudi Arabia. Settings and Design: A cross-sectional study conducted from 2019 to 2020. Methods and Material: An electronic questionnaire containing biographical data, 2nd edition of Beck Depression Inventory (BDI), and The NorVold Abuse Questionnaire (NorAQ) was sent to the participants. Statistical Analysis Used: Data were analyzed using SPSS version 24 with a statistical significance set at P < 0.05. Tests of significance measured using independent t test and Chi-square test. Results: The study included 214 female medical students and 11 interns aged 18 to 26 with a mean of 20.66 ± 1.725 years. Most women (92.4%) were single, and the highest responders (30.2%) were second-year students. Based on The NorVold Abuse Questionnaire (NorAQ), the prevalence of violence was 56.9%. The most common form of violence was emotional abuse (50.2%) and the highest combined types of abuse were emotional and physical abuse (14.7%). Based on BDI scale, the prevalence of depression amongst our sample was 32.9%; it was mild in 14.2%, moderate in 15.6% and severe in 3.1%. None of the types of abuse were significantly associated with depression. However, severe depression was highest amongst students/interns with history of emotional or sexual violence. Conclusion: More than half of the participants were subjected to domestic abuse throughout their lives. Emotional abuse was the commonest type followed by physical, sexual, and healthcare abuses, respectively. However, the present study demonstrated no significant association between abuse and depression.

Keywords: Depression, domestic abuse, medical students, violence

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An analysis was conducted by WHO using data from over 80 countries found that 30% of females who have been in a relationship had experienced physical or sexual violence by their husband or partner.[6] In addition, 38% of women murderers were found to be murdered by their intimate partner.[9] In Saudi Arabia, cultural norms that give men the greatest power at home plays a significant role.[7] Studies conducted in Saudi Arabia has found that the prevalence of DV was 11.9% in Taif,[8] 20% in Riyadh,[8] 33.34% in Jeddah[10] and 38.9% in Medina.[11] Whereas in Eastern KSA, the lifetime DV prevalence was 39.9%.[12] Regarding intimate partner violence in Saudi Arabia, two studies reported that 9-44.5% of women had experienced physical abuse from their partners during their lives.[12,13] Another two studies reported that 9.7-12.7% of women had experienced sexual violence in their lives and 48% had experienced sexual violence during pregnancy from their partners.[4,14] Prevalence of emotional abuse was 22-32.8%.[14] Psychological abuse was estimated to be 27.1%.[4] In a study conducted to determine the prevalence of domestic violence among women patients in a primary care setting, 45% of the 42 women interviewed reported experiencing physical, social, and/or emotional violence in their relationships.[13]

Depression is a common and serious recurrent mood disorder that can lead to dysfunction in many life aspects.[16] It is a major problem that can affect people from all ages worldwide, it is the chief cause of disability, and it may lead to suicide.[16] There are multiple forms of depression such as persistent depressive disorder or dysthymia, postpartum depression, and psychotic depression.[17] It consists of episodes of at least two weeks of losing interest or enjoyment, and other four symptoms at minimum.[18] Symptoms of depression include feeling empty, worthlessness, loss of energy, problems in recalling, making decisions, concentrating, sleeping, eating, and suicidal thoughts or attempts.[17-20] Intensity and duration of symptoms can vary for each patient.[17,19] Primary care providers play a vital role in recognizing and managing depression since it is estimated that 60% of mental health care delivery occurs in the primary care setting.[20]

Depression is caused by combination of biological, psychological, and social factors.[14] Family or personal history of depression, organic disease, some treatments, major negative life events, stress, and trauma are the risk factors of depression.[21] 4.4% of people from all ages around the world suffer from depression, this is equivalent to more than 300 million people, and the number is growing up.[21] It has been estimated that females are at twice lifetime risk of major depression than males.[18,22] In KSA, there were 1.34 million cases during 2000-2015, which is equivalent to 6.45% of KSA’s population.[21]

Positive association between depression and women violence was reported in the literature.[23] Multiple studies done in KSA showed a positive correlation between domestically abused women and depression.[10,24,28] To our knowledge, there is no study in our area regarding the impact of the DV on depression among female medical students, therefore, this research aims to evaluate the impact of domestic violence on depression among females students of Imam Abdulrahman bin Faisal University in the Kingdom of Saudi Arabia.

Materials and Methods

Ethical approval

Ethical approval was obtained from IRB office of Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia on March 18, 2019. The IRB number was (IRB-UGS-2019-01-164).

Study settings and design

A cross-sectional study conducted at Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia. The study has been done from June, 2019 until March, 2020. The targeted population was all female medical students studying at Imam Abdulrahman bin Faisal University during the study period. The calculated sample size of this study is 241 students.

Study participants

A total of 225 participants were included in this study as they met the inclusion criteria. A simple random sampling technique used to recruit female medical students during the study period. The sample size was calculated using Epi-info assuming that depression prevalence is 50% among the total 645 female medical students, with a confidence level of 95% and margin of error of 5%.

Study tools

An electronic questionnaire was sent for the participants, the questionnaire consisted of three parts:

Biographical data include: Age, year of studying, marital status, health status, economic status.

2nd edition of Beck Depression Inventory (BDI):

A self-administered questionnaire used to assess depression. The questionnaire contains 21 items scored from 0 to 3. Each item represents a different symptom of depression, and by collecting the scores for each participant, the existence and severity of the depression can be assessed. The scoring is follows: A- 0-13 considered minimal B- 14-19 considered mild C- 20-28 considered moderate, and D- 29 to 63 considered severe.[26] The reliability and validity of this questionnaire has been studied. Reliability of this questionnaire using Cronbach alphas ranged from 0.75 to 0.92 and inter-item correlations ranged from 0.53 to 0.78. Validity analysis for all items of Beck Depression Inventory ranged from 0.77 to 0.93.[27]

The NorVold Abuse Questionnaire (NorAQ): This is 15-items questionnaire used to assess many types of abuse. Each question has a scoring from 0 which means not at all to 8 which means every day. According to the participant answers, the scores were collected, and each participant was evaluated according to her scores. Many studies have been done to evaluate the validity.
and reliability of NorVold abuse questionnaire and all of them conclude that this questionnaire has a good level of validity and reliability.[28]

**Statistical analysis**
The data obtained from the participants were transferred to an excel sheet and analyzed using SPSS version 24 with a statistical significance set at $P < 0.05$. The data displayed as numbers, frequencies, mean, standard deviation, minimum and maximum. Tests of significance measured using independent $t$-test and Chi-square test to assess the association between different variables studied in this research.

**Results**

**Descriptive statistics**
The sample consisted of 225 female medical students and interns aged 18 to 26, with an average age of 20.66 years (standard deviation = 1.725). Most women (92.4%) were single, and the highest percentage of respondent (30.2%) were second-year students [Table 1]. Of the respondents, 50.2% had experienced emotional abuse, 25.8% experienced physical abuse, 12% experienced sexual abuse, and 4.9% experienced healthcare abuse.

**The prevalence of domestic violence**
The prevalence of violence amongst our sample was 56.9% ($n = 128$). The most common form of violence in the total study population was emotional abuse (50.2%, $n = 113$), followed by physical abuse (25.8%, $n = 58$), sexual abuse (12%, $n = 27$), and healthcare abuse (4.9%, $n = 11$) [Figure 1]. As shown in Table 2, The most prevalent act of emotional abuse was experiencing humiliation and repression by others and being threatened to limit contact with others with prevalence rates of 36.4% and 25.4% respectively. In total, 28.9% ($n = 65$) of the sample experienced at least one type of abuse and 28% ($n = 63$) were subjected to more than one type throughout their lives [Table 3]. Among the exposed women, 14.7% were exposed to emotional and physical abuse while 4.0% of the women were subjected to both emotional and sexual abuse. Experience of all four forms of violence accounted for 1.3%.

Of the respondents, it is interesting to note that all types of violence were primary experienced by the respondents during their childhood years, rather than during adulthood or both periods of their lives. With regards to marital status, we found that 58.8% ($n = 10$) of the married women in our sample were subjected to emotional abuse, whereas 49.5% ($n = 103$) of single women experience emotional abuse ($P = .461$). 26.0% ($n = 54$) of single women experienced physical abuse, while 23.5% ($n = 4$) of married women were subjected to physical abuse too ($P = .826$). Single women had higher rates of sexual abuse (12.0%, $n = 25$) compared to married women (11.8%, $n = 2$) ($P = .975$). Similarly, single women were more likely to experience healthcare abuse (5.3%, $n = 11$) than married women in our sample, who did not report having experiences with this type of abuse ($P = .331$). The highest incidences of emotional abuse were reported by second-year students, followed by third year and fifth year, with 55.9%, 53.5%, and 53.6% rates, respectively ($P = .699$). Interestingly, physical abuses cases were reported highest in sixth-year students, and lowest in interns, with 37.5% and 18.2% rates respectively ($P = .636$). Likewise, sexual abuse reports where highest in sixth-year students (20.8%), but lowest in second-year students (8.8%) ($P = .720$). As for healthcare abuse, no cases were reported from sixth-year students or interns, and the highest rate was amongst second-year students (7.4%) ($P = .592$).

**The prevalence of depression**
The overall prevalence of depression amongst our sample was 32.9% ($n = 74$). The majority (67.1%, $n = 151$) were found to have minimal to no depression, followed by moderate,
Table 2: Self-reported incidences of violence presented as frequency (n) and percentage (%) of the total population. n=225 Women

| Type of violence                                                                 | As a child (<18) | As an adult (>18) | As adult and child | Total% |
|----------------------------------------------------------------------------------|------------------|-------------------|--------------------|--------|
| Emotional                                                                         |                  |                   |                    |        |
| Someone repressed, degraded, or humiliated                                         | 39 (17.3%)       | 10 (4.4%)         | 33 (14.7%)         | 36.4%  |
| Forced me to limit my contacts with others by force                                 | 24 (10.7%)       | 7 (3.1%)          | 21 (9.9%)          | 25.4%  |
| threatened me or threatened somebody close to me                                    | 18 (8.0%)        | 9 (4.0%)          | 17 (7.6%)          | 19.6%  |
| Physical                                                                          |                  |                   |                    |        |
| hit, smacked my face, or held me firmly                                            | 34 (15.1%)       | 8 (3.6%)          | 7 (3.1%)           | 21.8%  |
| hit me with their fist or with a hard object, kicked, pushed me, gave me a beating | 23 (10.2%)       | 5 (2.2%)          | 6 (2.7%)           | 15.1%  |
| threatened my life (strangled, showed a weapon or a knife)                         | 3 (1.3%)         | 2 (0.9%)          | 4 (1.8%)           | 4.0%   |
| Sexual                                                                             |                  |                   |                    |        |
| touched parts of my body other than the genitals in a sexual way/forced me to touch parts of their body | 24 (10.7%)       | 1 (0.4%)          | -                  | 11.1%  |
| forced to watch pornography against my will/forced to participate in a pornographic movie | 8 (3.6%)         | 1 (0.4%)          | -                  | 4.0%   |
| showed my body naked, or forced to watch others naked body                          | 16 (7.1%)        | -                 | -                  | 7.1%   |
| touched my genitals, used my body to satisfy them sexually or forced me to touch anybody else's genitals | 4 (1.8%)         | -                 | -                  | 1.8%   |
| put his penis into my vagina, mouth, or rectum/tried put an object or other part of the body into my vagina, mouth, or rectum | 1 (0.4%)         | 4 (1.8%)          | 1 (0.4%)           | 2.6%   |
| Healthcare                                                                         |                  |                   |                    |        |
| felt degraded while visiting health service/someone exercised blackmail against me or did not show respect of my opinion | 1 (0.4%)         | 4 (1.8%)          | 1 (0.4%)           | 2.6%   |
| had a terrible and insulting experience without knowing how it could happen         | 4 (1.8%)         | 4 (1.8%)          | -                  | 3.6%   |
| a healthcare provider has hurt me physically or mentally, grossly violated me or used my body to my disadvantage for their own purpose | 1 (0.4%)         | 1 (0.4%)          | -                  | 0.8%   |

Table 3: Overlap of exposure to emotional, physical, sexual, and healthcare abuse (n=128). Presented frequency (n) and percentage (%) of the total population.

| Type of abuse                          | % (n)  |
|----------------------------------------|--------|
| Emotional only                         | 24.0 (54) |
| Physical only                          | 3.1 (7)   |
| Sexual only                            | 1.3 (3)   |
| Healthcare only                        | 0.4 (1)   |
| Emotional and physical                 | 14.7 (33)  |
| Emotional and sexual                   | 4.0 (9)    |
| Emotional and healthcare               | 0.9 (2)    |
| Physical and sexual                    | 1.3 (3)    |
| Physical and healthcare                | 0.4 (1)    |
| Emotional, Physical and Sexual abuse   | 3.6 (8)    |
| Emotional, Physical, Sexual and Healthcare abuse | 1.3 (3)    |

mild, then severe depression with prevalence rates of 15.6% (n = 35), 14.2% (n = 32), and 3.1% (n = 7) respectively. Among the women, 36% reported ‘I feel sad much of the time’, 34.7% reported ‘I don’t enjoy things as much as I used to’, and 36.4% reported ‘I have less energy than I used to have’ [Table 4]. Among the respondents, 12.4% Reported having suicidal ideation, and 3.1% reported that they would commit suicide. Regarding the marital status, 13.0% (n = 27) of single women were found to have mild depression, 15.9% (n = 33) had moderate depression, and 2.9% (n = 6) had severe depression. On the other hand, married women had slightly higher rates of mild and severe depression and a lower rate of moderate depression, with 29.4% (n = 5), 11.8% (n = 2) and 5.9% (n = 1) mild, moderate, and severe depression incidence rates respectively (P = .245). As for the prevalence of depression depending on academic years, mild depression was most prevalent amongst sixth year students, as 20.8% (n = 5) out of the 24 sixth year students enlisted in our study were found to be affected by it. Following sixth year students, mild depression was subsequently highest amongst fourth year (17.6%, n = 9), fifth year (14.3%, n = 4), third year (14.0%, n = 6), and second year students (11.8%, n = 8), respectively. Similarly, moderate depression was highest amongst sixth year students (20.8%, n = 5), succeeded by second year (20.6%, n = 14), fourth (17.6%, n = 9), third (14.0%, n = 6), and fifth year students (3.6%, n = 1). Concerning severe forms of depression, we found the highest prevalence was amongst those in their third year (4.7%, n = 2), followed by second year (4.4%, n = 3), fifth year (3.6%, n = 1), and fourth year (2.0%, n = 1), respectively. No cases of mild, moderate, or severe depression was reported amongst interns, and no severe depression cases were recorded amongst sixth year students (P = .527) [Table 5].

The impact of domestic violence on the development of depression

Among the female respondents who were subjected to emotional abuse at some point in their lives, 18.6% (n = 21) of them were experiencing mild depression, an identical percentage 18.6% (n = 21) suffered from moderate depression, and 3.5% (n = 4) were severely depressed (P = .087). As for physical abuse victims, 19% (n = 11) had mild depression, 13.8% (n = 8) had moderate forms of depression, and none of them suffered from severe depression (P = .281). Furthermore, 14.8% (n = 4) of sexual abuse victims reported mild depression, 11.1% (n = 2) moderate, and 3.7% (n = 1) were severely depressed (P = .923). Finally, we found that amongst the females who were subjected
to healthcare abuse at some point, 27.3% ($n = 3$), 18.2% ($n = 2$), and 0% cases of mild, moderate, and severe depression were reported, respectively ($P = .558$) [Figure 2 and Table 6].

**Discussion**

Over the past years, there are growing studies around the world about the impact of female abuse on mental health generally and depression specifically. However, only few studies addressed this issue in KSA. Hence, this is a population based study performed in KSA which aimed to investigate the different types of domestic violence and its association with self-reported symptoms of depression in addition to their prevalence among female medical students in IAU.

In this study, socio-demographic characteristics have trivial differences between the participants because they were almost in the same age, have the same educational level, attend the same collage, and nearly all of them were singles. Around 56.9% of the participants experienced emotional, physical, sexual, or/and healthcare abuses at some point in their lives. The overall prevalence of female medical students abuse in this study is higher than the prevalence of a study conducted in King Saud university in KSA on female medical students (5.3%). However, another study performed in Lebanon on medical students which included both males and females reported that 90.2% of students were exposed to verbal violence and 22% of them were exposed to physical. These noteworthy differences between the prevalence of abuse can be attributed to the different measurement methods that were used to determine the exposure to the violence and its different types, self-reported biases, number of the participants in each study, or the nature of the sample especially in Lebanon study.

Among the participants, 28% were subjected to more than one type of domestic abuse throughout their lives. The most common type of abuse was found to be is emotional abuse (50.2%, $n = 113$). This finding is consistent with several studies that were carried out nationally and internationally. Moreover, Emotional abuse accompanied physical abuse in 14.7% ($n = 33$) of physically abused female. Similar overlap between emotional and physical abuses was documented in other studies. In addition, 75% of the participants who were exposed to sexual abuse were also subjected to emotional abuse. In fact, emotional abuse which includes controlling behavior and threatening is used to obtain dominance and obedience and this might explain the high prevalence of emotional abuse and the accompany of emotional abuse to physical and sexual abuses which both involve some form of it.

On the other hand, healthcare abuse was the least reported type of abuse (4.9%, $n = 11$). This might be because that this

![Figure 2: The prevalence of depression in violence victims in percentage (%)](image)

![Table 4: Self-reported symptoms of depression presented as frequency (n) and percentage (%) of the total population](table)

| Depression symptoms | Severity of the symptoms |
|---------------------|--------------------------|
| Sad                 | I feel sad much of the time 81 (36.0%) | I am sad all the time 2 (9.9%) | I am so sad or unhappy that I can't stand it 6 (2.7%) |
| loss of pleasure    | I don't enjoy things as much as I used to 78 (34.7%) | I get very little pleasure from the things I used to enjoy 22 (9.8%) | I can't get any pleasure from the things I used to enjoy 6 (2.7%) |
| Loss of interest    | I am less interested in other people or things than before 76 (33.8%) | I have lost most of my interest in other people or things 15 (6.7%) | I don't have enough energy to do anything very much 18 (8.0%) |
| loss of energy      | I have less energy than I used to have 82 (36.4%) | I don't have enough energy to do very much 18 (8.0%) | I don't have enough energy to do anything 13 (5.8%) |
| Tiredness          | I get more tired or fatigued more easily than usual 72 (32.0%) | I am too tired or fatigued to do a lot of the things I used to do 13 (5.8%) | I am too tired or fatigued to do most of the things I used to do 16 (7.1%) |
| Fatigue            | I sleep somewhat more/less than usual 66 (29.3%) | I sleep a lot more/less than usual 27 (12.0%) | I sleep most of the day or I wake up 1-2 h early and can't get back to sleep 13 (5.8%) |
| Changes in         | I can't concentrate as well as usual 62 (27.6%) | It's hard to keep my mind on anything for very long 26 (11.6%) | I find I can't concentrate on anything 5 (2.2%) |
| Sleeping Pattern   | I have thoughts of killing myself, but I would not carry them out 28 (12.4%) | I would like to kill myself 7 (3.1%) | I would kill myself if I had the chance 5 (2.2%) |

![Table 5: Prevalence of depression within academic year in percentage (%)](table)

| Academic year | Mild depression | Moderate depression | Severe depression | Total depression |
|---------------|-----------------|---------------------|------------------|-----------------|
| Second year   | 11.8 (8)        | 20.6 (14)           | 4.4 (3)          | 36.7 (25)       |
| Third year    | 14.0 (6)        | 14.0 (6)            | 4.7 (2)          | 39.5 (14)       |
| Fourth year   | 17.6 (9)        | 17.6 (9)            | 2.0 (1)          | 37.2 (19)       |
| Fifth year    | 14.3 (4)        | 3.6 (1)             | 3.6 (1)          | 21.4 (6)        |
| Sixth year    | 20.8 (5)        | 20.8 (5)            | -                | 41.6 (10)       |
| Interns       | -               | -                   | -                | -               |
Table 6: The prevalence of depression in violence victims in percentage % (n)

| Type       | Mild      | Moderate | Severe    | Total     | P  |
|------------|-----------|----------|-----------|-----------|----|
| Emotional  | 18.6% (n=21) | 18.6% (n=21) | 3.5% (n=4) | 40.7% (n=46) | 0.087 |
| Physical   | 19% (n=11) | 13.8% (n=8)   | None       | 32.8% (n=19) | 0.281 |
| Sexual     | 14.8% (n=4) | 11.1% (n=2)   | 3.7% (n=1)  | 29.6% (n=7)  | 0.923 |
| Healthcare | 27.3% (n=3) | 18.2% (n=2)   | None       | 45.5% (n=5)  | 0.558 |

The overall prevalence of depression among female medical students is 32.9%. This result is consistent with many other studies that have been previously published. Also, around 12.4% of the participants reported having suicidal ideation and 3.1% would commit suicide. Similar results of a systemic review and meta-analysis study, which investigated the depression and suicidal ideation among medical students, was reported. The article showed that 11.1% of medical students reported suicidal ideation during studying in medical school. It is noteworthy to mention that the prevalence of depressive symptoms varied among academic years with highest prevalence among sixth year medical students (41.6%). In a study conducted in Portuguese, it found that there is a rise in the rate of anxiety and depressive symptoms among senior medical students (5th year). This was attributed to the increase in demand of academic knowledge with new responsibilities, the concerns about clinical internship and preparation of the national exam of residency program application which is highly competitive. However, other studies that were conducted in KSA reported that depression was higher among newly entered medical students compared to senior medical students. In general, the high prevalence of depression among female medical students can be attributed to many factors, such as the highly competitive environment of med school which associated with factors that negatively impact academic performance as well as students’ physical and mental health, the competition on the limited seats in residency program and the yearly updating requirement for residency program application, the conflicting roles of demands, personality traits, cultural aspects of gender role and social stigma and over expectations, family and friends pressure, social life and family problems, and being exposed to domestic violence. In a study that was conducted on male medical students in Alba university in KSA, it showed that extreme depression was reported by students who were subjected to domestic violence and who had major trauma and psychiatric problems. Since female have been frequently the victims of domestic violence, we proposed that the impact of domestic violence on female medical students’ depression would be higher in rate.

This study showed that 40.7% (n = 46) of females who were subjected to emotional abuse, 32.8% (n = 19) of females who experienced physical abuse, 29.6% (n = 7) of females who had sexual abuse and 45.5% (n = 5) of females who faced healthcare abuse are suffering from depression. However, none of these types of abuses demonstrated a significant relationship with depression. This insignificant relationship can be related to the fact that most of the participants who experienced abuse at some point in their life were subjected to it during their childhood. Though, other studies that addressed the impact of female abuse on depression found that females who experienced abuse were more likely to have depression. Some studies considered traumatic and psychological stress reactions as the core mechanism for explaining the relationship between abuse and depression. Traumatic events which include fear, stress, isolation, helplessness, hopelessness, and powerless can all lead to depression.

The strengths of the present study include using questionnaires that were easy to comprehend and based on simple valid NorAQ tool to assess different types of abuse and 2nd edition of BDI scale to screen depression. Furthermore, based on the best available knowledge, this study was the first to assess the impact of abuse on depression among female medical students in KSA. In addition, the response rate was very high which consolidate the findings of the study.

There are several limitations in the present study. First, for being a cross-sectional study, it can’t determine the cause and
The impact of domestic violence on depression in intimate partner violence is prevalent among female medical students. Emotional abuse was the commonest type followed by physical, sexual, and healthcare abuses, respectively. Moreover, sixth-year medical students have reported the highest prevalence of depressive symptoms in comparison with other academic years. However, the present study demonstrated no significant association between abuse and depression.

Besides the limitations, this study could have a significant public health impact on the findings. Therefore, these findings may encourage researchers to consider studying this topic on a larger scale in well-designed longitudinal study to assess the relationship between abuse and depression, and thus establishing effective evaluative and preventive methods to help the victims. In addition, medical school might consider establishing counselling program to address studying and home issues and their impact on the students. Furthermore, the vital role of primary care physicians in early detection of signs of abuse, and in screening for depression must be emphasized. It must not be overlooked or underestimated as it could prevent grave consequences such as suicidal attempts and the continuation of abuse. Education and empowerment of patients suspected to be abuse victims may be all they need to start taking active steps in reporting the violence and might instill enough hope and motivation for them to seek help for the management of the mental health consequences of violence.

In conclusion, more than half of the participants were subjected to domestic abuse throughout their lives. Emotional abuse was the commonest type followed by physical, sexual, and healthcare abuses, respectively. Moreover, sixth-year medical students have reported the highest prevalence of depressive symptoms in comparison with other academic years. However, the present study demonstrated no significant association between abuse and depression.

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Key Messages
- Domestic abuse is prevalent among female medical students
- Emotional abuse was the commonest type followed by physical, sexual, and healthcare abuses, respectively.
- Depression is prevalent among female medical students
- Counselling program can be adopted to help students.

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Conflicts of interest
There are no conflicts of interest.

References
1. World Health Organization. WHO Multi-Country Study on Women’s Health and Domestic Violence Against Women. Geneva, Switzerland: World Health Organization; 2005.
2. Flury M, Nyberg E, Riecher-Rössler A. Domestic violence against women: Definitions, epidemiology, risk factors and consequences. Swiss Med Wkly 2010;140:w13099.
3. Afifi ZE, Al-Muhaidib NS, Hadish NF, Ismail FL, Al-Qeamy FM. Domestic violence and its impact on married women’s health in Eastern Saudi Arabia. Saudi Med J 2011;32:612-20.
4. Violence against women. Who.int. 2017. Available from: https://www.who.int/news-room/fact-sheets/detail/violence-against-women [Last accessed on 2020 Nov 05].
5. Mason R, O’Rinn SE. Co-occurring intimate partner violence, mental health, and substance use problems: A scoping review. Glob Health Action 2014;7. doi: 10.3402/gha.v7.24815.
6. Risk and Protective Factors | Intimate Partner Violence | Violence Prevention | Injury Center | CDC. Cdc.gov. 2017. Available from: https://www.cdc.gov/violenceprevention/intimatepartnerviolence/riskprotectivefactors.html. [Last accessed on 2020 Nov 05].
7. Alhalal E, Ta’an W, Alhalal H. Intimate partner violence in Saudi Arabia: A systematic review. Trauma Violence Abuse 2019:1524838019867156. doi:10.1177/1524838019867156.
8. Alzahrani TA, Abalkhail BA, Ramadan IK. Prevalence of intimate partner violence and its associated risk factors among Saudi female patients attending the primary healthcare centers in Western Saudi Arabia. Saudi Med J 2016;37:96-9.
9. Barnawi FH. Prevalence and risk factors of domestic violence against women attending a primary care center in Riyadh, Saudi Arabia. J Interpers Violence 2017;32:1171-86.
10. Wali R, Khalil A, Alattas R, Foudah R, Meftah I, Sarhan S. Prevalence and risk factors of domestic violence in women attending the National Guard Primary Health Care Centers in the Western Region, Saudi Arabia, 2018. BMC Public Health 2020;20:239.
11. Tashkandi A, Rasheed FP. Wife abuse: A hidden problem. A study among Saudi women attending PHC centres. East Mediterr Health J 2009;15:1242-53.
12. Alhabib S. The Prevalence and Experiences of Intimate Partner Violence among Saudi Women in the UK. Bristol, England: University of Bristol; 2011.
13. Eldoseri HM, Sharps P. Risk factors for spousal physical violence against women in Saudi Arabia. J Interpers Violence 2020;35:1269-93.
14. Alquaiz AM, Almuneef M, Kazi A, Almeneessier A. Social determinants of domestic violence among Saudi married women in Riyadh, Kingdom of Saudi Arabia. J Interpers Violence 2017;886260517746128. doi:10.1177/0886260517746128.
15. Elliott BA, Johnson MM. Domestic violence in a primary
care setting. Patterns and prevalence. Arch Fam Med 1995;4:113-9.
16. Depression. Who.int. 2018. Available from: http://www.who.int/news-room/Fact-sheets/detail/depression. [Last accessed on 2020 Nov 05].
17. Depression. Nimh.nih.gov. 2021. Available from: https://www.nimh.nih.gov/health/topics/depression/index.shtml. [Last accessed on 2020 Nov 05].
18. Major Depression. Nimh.nih.gov. 2018. Available from: https://www.nimh.nih.gov/health/statistics/major-depression.shtml. [Last accessed on 2020 Nov 05].
19. Depression Among Women | Depression | Reproductive Health | CDC [Internet]. Cdc.gov. 2017. Available from: https://www.cdc.gov/reproductivehealth/depression/. [Last accessed on 2020 Nov 05].
20. Park LT, Zarate CA Jr. Depression in the primary care setting. N Engl J Med 2019;380:559-68.
21. WHO. Depression and Other Common Mental Disorders Global Health Estimates. Geneva: World Health Organization; 2017.
22. Kessler RC, Bromet EJ. The epidemiology of depression across cultures. Annu Rev Public Health 2013;34:119-38.
23. Kim J, Lee J. Prospective study on the reciprocal relationship between intimate partner violence and depression among women in Korea. Soc Sci Med 2013;99:42-8.
24. Al Dosary AH. Health impact of domestic violence against Saudi Women: Cross sectional study. Int J Health Sci (Qassim) 2016;10:165-73.
25. Eldoseri HM, Tufts KA, Zhang Q, Fish JN. Adverse health effects of spousal violence among women attending Saudi Arabian primary health-care clinics. East Mediterr Health J 2014;20:17-25.
26. Beck, Aaron T, Robert A. Steer, and Gregory K. Brown. Bdi-ii, Beck Depression Inventory: Manual., 1996
27. Khan AA, Marwat SK, Noor MM, Fatima S. Reliability and validity of beck depression inventory among general population in Khyber Pakhtunkhwa, PAKISTAN. J Ayub Med Coll Abbottabad 2015;27:573-5.
28. Swahnberg IM, Wijma B. The NorVold Abuse Questionnaire (NorAQ): Validation of new measures of emotional, physical, and sexual abuse, and abuse in the health care system among women. Eur J Public Health 2003;13:361-6.
29. Almeneessier A, Al Saadi M, Nooh R, Al Ansary L. Family violence among female medical students: Its prevalence and impact on their mental health status – A cross-sectional study. Journal of Taibah University Medical Sciences 2015;10:339-40.
30. Usta J, Hlais S, Farhat HA, Romani M, Bzeih H, Abdo L. Lebanese medical students’ exposure to domestic violence: Does it affect helping survivors? Fam Med 2014;46:112-9.
31. Kazzaz YM, Alameer KM, AlAhmari RA, Househ M, El-Metwally A. The epidemiology of domestic violence in Saudi Arabia: A systematic review. Int J Public Health 2018;641:223-32.
32. Yuan W, Hesketh T. Intimate partner violence and depression in women in China. J Interpers Violence 2019;886260519888538. doi: 10.1177/0886260519888538.
33. Lövestad S, Löve J, Væz M, Krantz G. Prevalence of intimate partner violence and its association with symptoms of depression; A cross-sectional study based on a female population sample in Sweden. BMC Public Health 2017;17:335.
34. Boy A, Kulczycki A. What we know about intimate partner violence in the Middle East and North Africa. Violence Against Women 2008;14:53-70.
35. Madula P, Kalemba FW, Yu H, Kaminga AC. Healthcare provider-patient communication: A qualitative study of women’s perceptions during childbirth. Reprod Health 2018;15:135.
36. Jahlan I, Plummer V, McIntyre M. What women have to say about giving birth in Saudi Arabia. Middle East J Nurs 2016;10:10-8.
37. Vedam S, Stoll K, Taiwo TK, Rubashkin N, Cheney M, Strauss N, et al. The giving voice to mothers study: Inequity and mistreatment during pregnancy and childbirth in the United States. Reprod Health 2019;16:77.
38. Mistreatment of women during childbirth a sad reality worldwide. World Health Organization. 2017. Available from: https://www.who.int/reproductivehealth/topics/maternal_perinatal/mistreatment-during-childbirth/en/. [Last accessed on 2020 Aug 23].
39. Erdil F, Korkmaz F. Ethical problems observed by student nurses. Nurs Ethics 2009;16:589-98.
40. Sultan S, Alhosaini A, Sheerah S, Alrohaily A, Saeed H, Al-Raddadi N, et al. Prevalence of depression among medical students at Taibah University, Madinah, Saudi Arabia. International Journal of Academic Scientific Research 2016;4:93-102.
41. Alharbi H, Almalki A, Alabdan F, Haddad B. Depression among medical students in Saudi medical colleges: A cross-sectional study. Adv Med Educ Pract 2018;9:887-91.
42. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, et al. Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: A systematic review and meta-analysis. JAMA 2016;316:2214-36.
43. Moreira de Sousa J, Moreira CA, Telles-Correia D. Anxiety, depression and academic performance: A study amongst Portuguese medical students versus non-medical students. Acta Med Port 2018;31:454-62.
44. Jarwan B. Depression among medical students of Faculty of Medicine, Umm Al-Qura University in Makkah, Saudi Arabia. Int J Med Sci Public Health 2015;4:184.
45. Moutinho I, Maddalena N, Roland R, Lucchetti A, Tibirică S, Ezequiel O, et al. Depression, stress and anxiety in medical students: A cross-sectional comparison between students from different semesters. Rev Assoc Med Bras 2017;63:21-8.
46. Brenneisen Mayer F, Souza Santos I, Silveira PS, Itaqui Lopes MH, de Souza AR, Campos EP, et al. Factors associated to depression and anxiety in medical students: A multicenter study. BMC Med Educ 2016;16:282.
47. Albaajar MA, Bakarman MA. Prevalence and correlates of depression among male medical students and interns in Albaia University, Saudi Arabia. J Family Med Prim Care 2019;8:1889-94.
48. Haqqi S, Faizi A, Haqqi S. Prevalence of domestic violence and associated depression in married women at a Tertiary care hospital in Karachi. Proc Soc Behav Sci 2010;5:1090-7.
49. Hawcroft C, Hughes R, Shaheen A, Usta J, Elkadi H, Dalton T, et al. Prevalence and health outcomes of domestic violence amongst clinical populations in Arab countries: A systematic review and meta-analysis. BMC Public Health 2019;19:315.