

## Unveiling awareness: determining the university students' understanding of female reproductive rights through a validated questionnaire

Hina Ahmed, Haiqa Ashraf, Fiza Shahbaz

### Abstract

**Objective:** To compare the knowledge of medical and non-medical students regarding female reproductive rights.

**Method:** The comparative, analytical study was conducted in Lahore, Pakistan, from April to October 2023, and comprised medical students from the Central Park Medical College, Lahore, and non-medical students from the Superior College, Lahore. Using factor analysis, validation of the self-developed questionnaire was done, and five factors were identified: supportive influence, premarital screening and stigma, conscious decision, decision about marriage, and contraceptive choices. The questionnaire's overall reliability was 0.84 using Cronbach alpha value. Data was analysed using SPSS 25.

**Results:** Of the 500 students, 250(50%) were medical students with mean age  $20.95 \pm 1.776$  years, and 250(50%) were non-medical students with mean age  $21.14 \pm 1.547$  years. There was a statistically significant difference in knowledge level regarding women's reproductive rights between medical and non-medical students ( $p < 0.05$ ).

**Conclusion:** Significant differences were noted in the knowledge level of medical and non-medical students regarding female reproductive rights, underlining the need to create awareness among young adults.

**Keywords:** Reproductive rights, Healthcare disparity, Unwanted pregnancy, Healthcare accessibility, Attitudes towards health, Mandatory screening, Personal autonomy. (JPMA 75: 1100; 2025)

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### Introduction

The World Health Organisation (WHO) states that as opposed to simply the absence of disease or infirmity, reproductive health is a state of complete physical, mental and social wellbeing with regard to all aspects of the reproductive system and its processes and functions.<sup>1</sup> Reproductive health pertains to the capacity of individuals to engage in sexual activity in a manner that is both gratifying and secure, as well as their freedom of choice regarding the timing, manner and frequency of reproduction.<sup>1</sup>

During the 1950s and 1960s, the field of demography emerged as an autonomous discipline that provided assistance to advancements in reproductive technology and contraception.<sup>2</sup> The notions of family planning, reproductive health, and the right to be joined into a broader framework emerged in the 1990s. Diverse organisations with a focus on the reproductive life cycle, sexually transmitted disease (STDs) support, acquired immune deficiency syndrome (AIDS) support, and adolescents' special needs.<sup>2</sup>

An emphasis was placed on individual decision-making in reproductive health at the 1994 International Conference

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of Population Development (ICPD) in Cairo.<sup>3</sup> The purview of family planning was broadened to encompass all aspects of the individual, including reproductive capability, contraceptive availability, personal preference, and contentment. Reproductive rights for women came into existence as a result.<sup>4</sup>

Young adults and adolescents constitute 64% of the total population in Pakistan, with individuals aged 15-29 years comprising the remaining 29%.<sup>4</sup> Young adults lack awareness regarding the reproductive right, with a particular deficiency among females.<sup>5</sup> It emphasises the significance of educating this demographic so that it may experience reproductive years without apprehension.<sup>6</sup>

The current study was planned to develop a validated questionnaire to determine knowledge regarding the female reproductive rights, and to compare the knowledge of young non-medical and medical students. The null hypothesis was that there existed no difference in knowledge among medical and non-medical students regarding awareness of female reproductive rights.

### Subjects and Methods

The comparative, analytical study was conducted in Lahore, Pakistan, from April to October 2023, and comprised medical students from the Central Park Medical College (CPMC), Lahore, and non-medical students from the Superior College, Lahore. All individuals aged 18-30 years of both genders (255 females and 245 males) were included after taking verbal informed consent. Using WHO

calculator,<sup>7</sup> the sample size was determined by keeping the prevalence at 47.1%,<sup>8</sup> with 95% confidence interval (CI) and 5% margin of error. One response per person was the maximum allowed by the response parameters. The sample was raised using convenience sampling technique, and the

recruitment process was facilitated by faculty members who distributed printed questionnaires to students during class hours. Those not willing to participate were excluded.

Data was gathered after approval from the CPMC ethics review committee. The data-collection tool was a self-

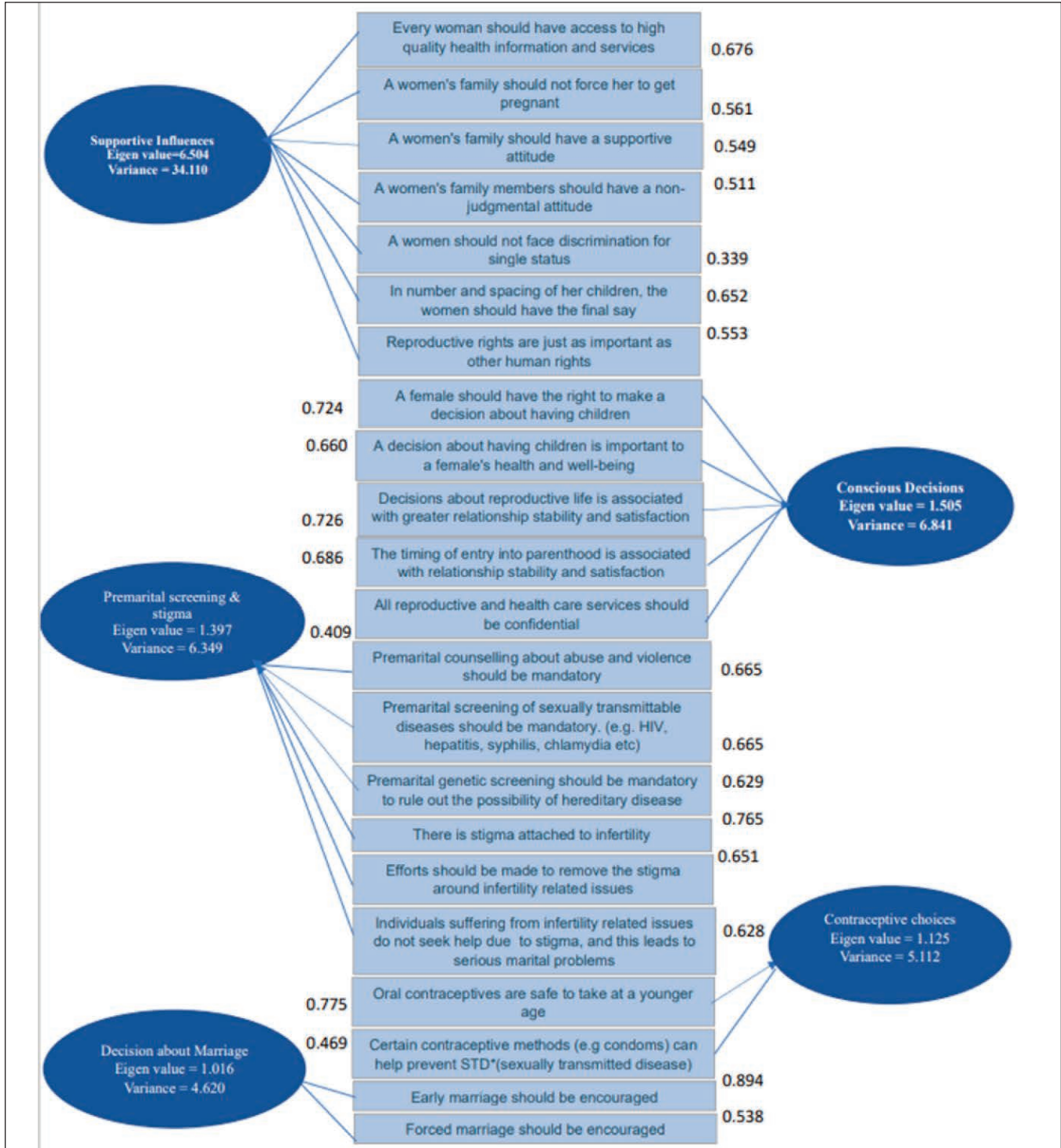


Figure-1: Exploratory Factor Analysis (EFA) of the study questionnaire.

created questionnaire. The first segment dealt with demographic data, such as age, education level, family income and family system, whereas the major section included assertions about women's reproductive rights. The questionnaire items were scored on a 3-point Likert scale, ranging from strongly disagree (SD) to strongly agree (SA).

Exploratory factor analysis (EFA) was conducted to determine the internal structure of the developed questionnaire. Varimax rotation was used with principal component analysis. The requirements for eigenvalues were set to higher than or equal to 1.0. The significance of Kaiser-Meyer-Olkin (KMO) and the Bartlett test allowed for EFA. The factor analysis revealed five key factors with distinct contributions to the dataset. The first factor, "supportive influence", explained the largest variance (31.11) with an eigenvalue of 6.504, encompassing seven sub-dimensions, highlighting its central role in shaping outcomes. The second factor, "premarital screening and

stigma", accounted for 6.3 of the variance (eigenvalue 1.397) with six sub-dimensions, reflecting the complexities

**Table-1:** Demographic characteristics of the subjects.

Parameters	Medical Students n (%)	Non-Medical Students n (%)
<b>Mean Age</b> (years)	20.95±1.776	21.14±1.547
<b>Gender</b>		
Females	130 (51)	125 (49)
Males	120 (48)	125(51)
<b>Monthly income</b>		
Lower income (< 50,000)	12 (4.8)	36 (14.4)
Middle income (50,000-75,000)	47 (18.8)	74 (29.6)
High income (> 75, 000)	191 (76.4)	140 (56.0)
<b>Education of respondents</b>		
Undergraduate	250 (100)	250 (100)
Post Graduate	-	-
<b>Family System</b>		
Nuclear	170 (60.8)	136 (54.4)
Joint	51 (20.4)	68 (27.2)
Combine	11.6)	46 (18.4)

**Table-2:** Responses of medical students indicating their level of knowledge about women's reproductive rights.

Factors among medical students	Strongly Disagree n(%)	Neutral n(%)	Strongly Agree n(%)	Chi-square	p-value
<b>Supportive attitude</b>					
Every woman should have access to high quality health information and services	5 (2)	12 (5)	233 (93)	276.6	0.000*
A women's family should not force her to get pregnant	5(7)	20(13)	225(80)	242	0.000*
A women's family should have a supportive attitude	3 (6)	22(6.8)	225(87)	326.4	0.000*
A women's family members should have a non-judgmental attitude	8(9)	28 (10)	214 (80)	253	0.000*
A women should not face discrimination for single status	21(17)	46 (22)	183 (60)	83.7	0.000*
In number and spacing of her children, the women should have the final say	10 (10)	48 (17)	192(730)	177	0.000*
Reproductive rights are just as important as other human rights	15 (7)	31 (11)	204 (82)	267	0.000*
<b>Premarital screening</b>					
Premarital counselling about abuse and violence should be mandatory	12 (8)	45 (18)	193(73)	181.9	0.000*
Premarital screening of sexually transmittable diseases should be mandatory. (e.g. HIV, hepatitis, syphilis, chlamydia etc)	12 (8)	41(17)	197 (75)	196.6	0.000*
Premarital genetic screening should be mandatory to rule out the possibility of hereditary disease	15 (9)	54 (22)	181 (69)	147.6	0.000*
There is stigma attached to infertility	19 (10)	67(25)	164(65)	123	0.000*
Efforts should be made to remove the stigma around infertility related issues	5 (2)	44(18)	201(80)	179.9	0.000*
Individuals suffering from infertility related issues do not seek help due to stigma, and this leads to serious marital problems	27(11)	40(16)	183(73)	201.2	0.000*
<b>Decision about marriage</b>					
Early marriage should be encouraged	104(42)	62(25)	84(34)	10.6	0.005*
Forced marriage should be encouraged	189(76)	19(7)	42(17)	161	0.000*
<b>Conscientious decision</b>					
Right to make decision about having children	4(2)	16(6)	230(92)	271	0.00*
Significance of reproductive decision-making for female health and well-being	9(4)	12(5)	229(91)	279	0.000*
Reproductive decisions linked to enhanced relationship stability and satisfaction	8(3)	26(10)	216(86)	246.5	0.000*
Timing of parenthood linked to relationship stability and satisfaction	9(4)	33(13)	208(83)	185	0.000*
Confidentiality imperative for reproductive and health care services	15(6)	32(13)	203(81)	204.7	0.000*
<b>Contraceptive choices</b>					
Oral contraceptives are safe to take at a younger age	105(42)	71(28)	74(30)	6.9	0.31
Certain contraceptive methods (e.g condoms) can help prevent STD* (sexually transmitted disease)	28(11)	62(25)	160(64)	117	0.000*

\*p- value ≤ 0.05 is statistically significant.

of societal perceptions. The third factor, "conscious decision", captured 6.8 of the variance (eigenvalue 1.505) with five sub-dimensions, emphasising deliberate decision-making processes. The fourth factor, "decision about marriage", contributed 4.6 variance (eigenvalue 1.016) and there were two sub-dimensions, focussing on marital choices. Lastly, "contraceptive choices" explained 5.112 of the variance (eigenvalue 1.125) with two sub-dimensions, addressing family planning considerations. Together, these factors provided a comprehensive framework for understanding the underlying constructs (Figure 1). Using Cronbach alpha value, the questionnaire's overall reliability was around 0.84 on the pilot sample.

Data was analysed using SPSS 25. To determine the difference of opinion between the groups, chi-square test was applied by keeping the significance level at <0.05.

## Results

Of the 500 students, 250(50%) were medical students with mean age 20.95±1.776 years, and 250(50%) were non-

**Table-3:** Responses of non-medical students indicating their level of knowledge about women's reproductive rights.

Factors among medical students	Strongly Disagree n(%)	Neutral n(%)	Strongly Agree n(%)	Chi-square	p-value
<b>Supportive attitude</b>					
Every woman should have access to high quality health information and services	14 (7)	29 (16)	199 (16)	403.4	0.000*
A women's family should not force her to get pregnant	18 (7)	33(13)	199(80)	362.6	0.000*
A women's family should have a supportive attitude	15 (6)	17(6.8)	218(87)	363.4	0.000*
A women's family members should have a non-judgmental attitude	23 (9)	25 (10)	202 (80)	309.7	0.000*
A women should not face discrimination for single status	42(17)	57 (22)	151 (60)	182.5	0.000*
In number and spacing of her children, the women should have the final say	25 (10)	43 (17)	182 (730)	221.2	0.000*
Reproductive rights are just as important as other human rights	17 (7)	28 (11)	205 (82)	263	0.000*
<b>Premarital screening</b>					
Premarital counselling about abuse and violence should be mandatory	22 (8)	45 (18)	183 (73)	223	0.000*
Premarital screening of sexually transmittable diseases should be mandatory. (e.g. HIV, hepatitis, syphilis, chlamydia etc)	20 (8)	43 (17)	187 (75)	237	0.000*
Premarital genetic screening should be mandatory to rule out the possibility of hereditary disease	23 (9)	55 (22)	172 (69)	180.2	0.000*
There is stigma attached to infertility	24 (10)	63 (25)	163(65)	130.9	0.000*
Efforts should be made to remove the stigma around infertility related issues	20 (8)	48(19)	182(73)	258	0.000*
Individuals suffering from infertility related issues do not seek help due to stigma, and this leads to serious marital problems	18(7)	44(18)	188(75)	179.8	0.000*
<b>Decision about marriage</b>					
Early marriage should be encouraged	105(42)	63(25)	82(33)	10.5	0.005*
Forced marriage should be encouraged	178(71)	34(13.6)	38(15)	204.1	0.000*
<b>Conscientious decision</b>					
Right to make decision about having children	19(8)	25(10)	206(82)	388	0.000*
Significance of reproductive decision-making for female health and well-being	20(8)	22(9)	208(83)	381.9	0.000*
Reproductive decisions linked to enhanced relationship stability and satisfaction	17(6)	33(13)	200(80)	381.7	0.000*
Timing of parenthood linked to relationship stability and satisfaction	17(7)	50(20)	183(73)	283.2	0.000*
Confidentiality imperative for reproductive and health care services	18(7)	43(17)	189(76)	259.4	0.000*
<b>Contraceptive choices</b>					
Oral contraceptives are safe to take at a younger age	101(40)	67(27)	82(33)	8.5	.014
Certain contraceptive methods (e.g condoms) can help prevent STD* (sexually transmitted disease)	31(12)	56(22)	163(65)	112.7	0.000*

\*p- value ≤ 0.05 is statistically significant.

medical students with mean age 21.14±1.547 years (Table 1).

Responses to the five themes identified by EFA were collected from medical (Table 2) and non-medical (Table 3) students. There was a statistically significant difference in the knowledge level regarding women's reproductive rights between medical and non-medical students ( $p<0.05$ ) (Tables 2-3), leading to the rejection of the null hypothesis and the acceptance of the alternate hypothesis (Figure 2).

## Discussion

The current findings show that the prevailing knowledge among the medical students was significantly high in supportive attitude regarding availing medical services, forced pregnancy, support from family, non-judgmental attitude, non-discrimination regarding single status, and child spacing than non-medical students. The results were in line with those of an earlier study.<sup>9</sup> Current literature suggests that educational attainment significantly influences awareness and attitudes towards pregnancy and

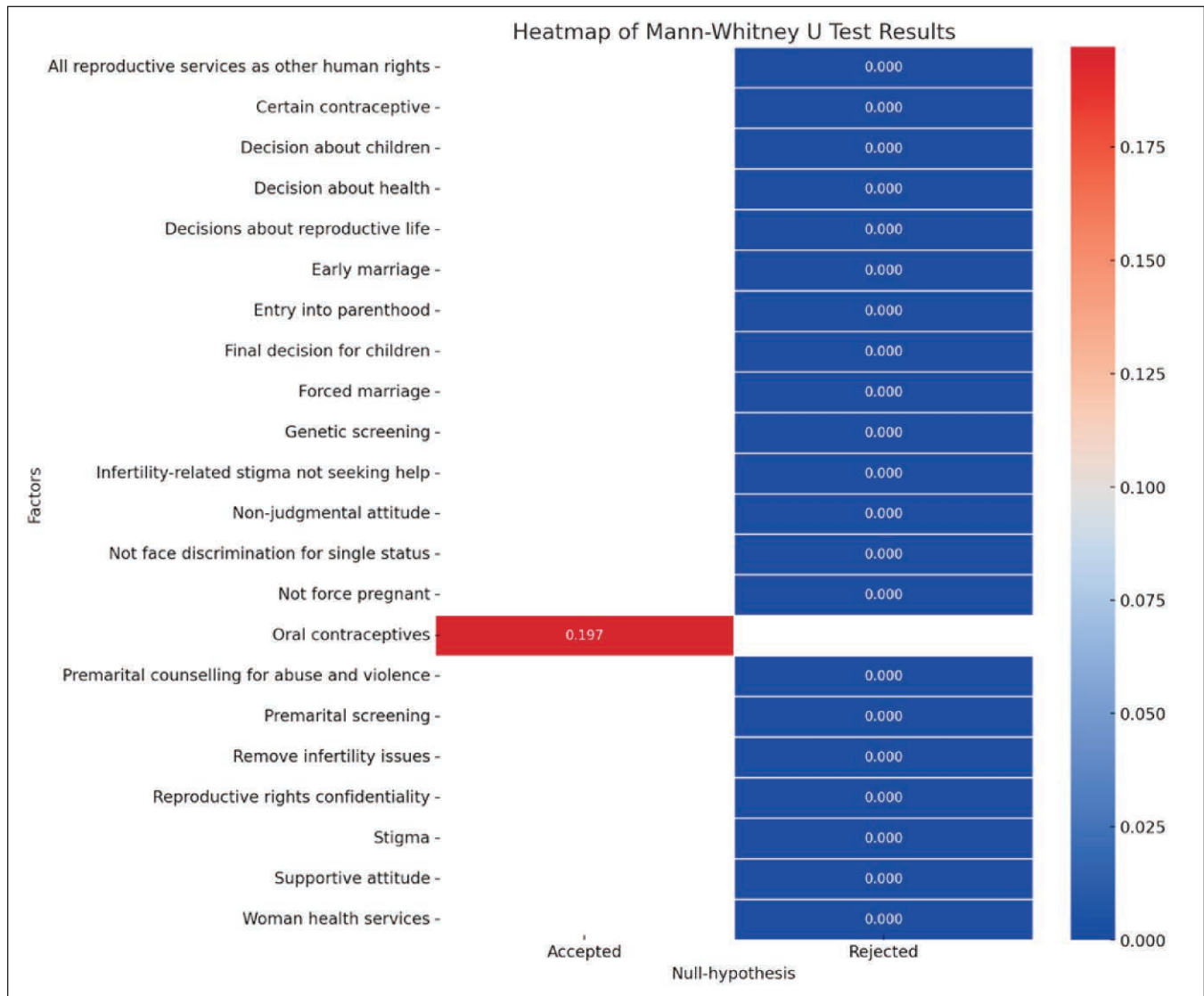


Figure-2: Summarized results of Mann-Whitney U-test. [Significance level at  $p < 0.05$ ]

reproductive health, indicating a need for improved educational interventions among university students.<sup>9</sup> Consistent results corroborate the current finding that women in pre-marriage age are less aware of reproductive rights<sup>10</sup> even though they ought to have timely access to and make use of health services that provide sexual and reproductive health education and information.<sup>11</sup> It is advisable that discussions regarding sexual and reproductive health provide young girls with the opportunity to increase their understanding and develop their self-assurance.<sup>11</sup> Furthermore, the sociocultural context significantly influences attitudes towards pregnancy. For example, studies have indicated that cultural beliefs and family support systems can either reinforce or challenge negative attitudes towards pregnancy, particularly among young women.<sup>12</sup>

Unintended pregnancies are among the most difficult public health issues imposing a significant socioeconomic burden on individuals and society because delayed knowledge hampers the access of young adults.<sup>12</sup> Unintended pregnancies result in abortions, which pose a life-threatening risk of sepsis, haemorrhage and major complications, thereby contributing to an increase in maternal and neonatal mortality on a global scale.<sup>13</sup> Furthermore, undesired pregnancies contribute to the growing population of orphans, while illegitimate births place additional strain on the public and healthcare, impeding economic development.<sup>14</sup> This highlights the need for educational initiatives that not only inform, but also engage students in discussions about the societal implications of forced pregnancies, thereby promoting a more holistic understanding of reproductive health.<sup>14</sup> A

study highlighted that university students who received education about sexual health demonstrated higher knowledge levels regarding infertility.<sup>15</sup> This underscores the importance of integrating comprehensive sexual health education into university curricula, which can positively influence students' understanding of infertility and related issues.<sup>10</sup> Similarly, a study found that nursing students exhibited varying attitudes towards infertility, which were influenced by their educational background and exposure to the subject matter.<sup>6</sup> This suggests that enhancing educational programmes can lead to more supportive attitudes among future healthcare professionals, thereby improving care for infertile individuals.<sup>8</sup> This aligns with the findings that documented the social stigma faced by infertile women, emphasising that societal perceptions significantly impact the experiences of those affected by infertility.<sup>16</sup> The stigma not only affects the mental health of individuals, but also their willingness to seek help and support.<sup>16</sup> The promotion of health is a responsibility of healthcare, according to the literature, which alters the understanding of health issues.<sup>17</sup>

The current results indicate that there was significant difference in knowledge between medical and non-medical students when it comes to the significance of premarital counselling regarding domestic violence, STDs, hereditary defects, stigma related to infertility. Research showed that many university students exhibited negative attitudes towards discussing domestic violence, often believing that such issues should remain private.<sup>18</sup> For instance, a study found that students who felt that domestic violence should not be shared with others, suggesting a troubling normalisation of silence around the issue.<sup>19</sup> This attitude can hinder victims from seeking help and can perpetuate cycles of violence.<sup>18</sup> Furthermore, the lack of awareness about the consequences of marital violence, including its impact on reproductive health, is concerning.<sup>20</sup> Studies have indicated that women who experience sexual, marital violence are more unlikely to seek reproductive health services.<sup>20</sup> Moreover, the psychological and behavioural consequences of exposure to domestic violence, including marital conflict and parenting styles, are critical factors that influence students' perceptions of violence.<sup>18</sup> This suggests that educational interventions targetting these areas could be beneficial in reshaping attitudes and increasing awareness among university students.<sup>15</sup> Additionally, the prevalence of risky sexual behaviours among university students further complicates the issue, as these behaviours are often linked to a lack of understanding about STDs and their implications for reproductive health.<sup>19</sup> Premarital counselling regarding genetic disorders and the stigma associated with infertility is crucial for university students,

as it can significantly influence their understanding and attitudes toward these sensitive topics.<sup>20</sup> The current knowledge among university students appears to be deficient, indicating a need for improvement in both areas.<sup>18</sup> This underscores the critical importance of providing young adults who are contemplating starting a family with comprehensive information regarding screening, counselling, education and communicable disease awareness, as well as guidance on hereditary and genetic disorders, healthy pregnancy, and medical conditions.<sup>18</sup> Research has indicated that the absence of premarital counselling significantly increases the likelihood of congenital malformations and instances of mental retardation.<sup>21</sup> Adequate knowledge regarding the significance of routine prenatal examinations, the identification and management of pregnancy-related conditions such as hypertension, thyroid disorders, and anaemia, as well as the dangers associated with conceiving at an advanced age, or while still young, such as Turner syndrome and diabetes mellitus (DM).<sup>22</sup> Counselling and education concerning sexual health, premarital genetic counselling and screening tests for thalassemia are valuable components of preventive medicine.<sup>22</sup> This practice not only aids in the prevention of an inherited disorder in the offspring, but also alleviates the psychological strain on the parents, and reduces the government's responsibility to ensure sufficient financial and healthcare resources.<sup>22</sup> In all developed nations, genetic counsellors offer the education and counselling that accompanies genetic testing, as this is crucial for the decision-making process and handling of test results.<sup>23</sup> Numerous studies have demonstrated that premarital counselling improves the quality of life for women and this segment is deficient when it comes to educate the university going young adults.<sup>19</sup>

The current study showed a strong disagreement among majority of medical and non-student populations to the statement that young girls and women should not be coerced into marriage at an early age. The results were similar to earlier ones.<sup>24</sup> An Ethiopian study supported the conclusion that knowledge among young adults was deficient about the fact that early marriages result in increased levels of domestic violence and abuse.<sup>25</sup> Age is a cultural determinant of an individual's standing within an institution and society.<sup>26</sup> Child marriage effectively terminates childhood by restricting the prospects of its victims in terms of education, skill acquisition, personal growth and mobility.<sup>27</sup> Furthermore, it raises the likelihood of early sexual initiation, adolescent pregnancy, and childbearing, all of which are detrimental consequences exacerbated by the underdeveloped physique of young girls and their limited or non-existent understanding of

healthy sexual and reproductive practices.<sup>27</sup> The cumulative impact of early marriage negatively affects the physical and mental health, overall quality of life, and psychosocial wellbeing of young women.<sup>26</sup>

It heightens the vulnerability of women to sexual violence due to factors, such as age disparity between spouses, power differentials, social isolation, and limited female autonomy.<sup>25</sup> Approximately 30% of girls aged 15-19 years worldwide are victims of partner violence in low- and middle-income countries (LMICs), with adolescent marriages resulting in a rise in domestic violence and a loss of autonomy, but these conditions gradually improve as the women's level of education improves.<sup>28</sup> This is due in part to the fact that child-brides tend to be less educated, economically disadvantaged, and conform to conventional gender roles.<sup>27</sup> It is highly advocated that university-going young adults should be given enough knowledge about female reproductive rights so that they may propagate the condemnation of child marriages.<sup>26</sup> As a result, the interdisciplinary investigation aligns with the present research agenda's top priorities, which included the advancement of evidence-based policymaking and interventions to alleviate the enduring sociocultural issue of child marriage.<sup>29</sup> This is significant not only from a human rights perspective, but also in relation to achieving the Sustainable Development Goals (SDGs).<sup>17</sup>

Both medical and non-medical participants in the current study showed difference in knowledge about expressed agreement that women should have the right to make decisions regarding having children, significance of reproductive health decision making and wellbeing, its linkage to marital relationship stability and satisfaction, entry into parenthood, and their confidentiality imperative for reproductive health and services. This is substantiated by research that the knowledge is deficient among college-going young adults.<sup>12</sup> This leads to the importance of highlighting the marital relations and household decision-making processes often imposed by the elders in the family, while females, who are the functional element of any household, are neglected as a whole due to cultural and social issues.<sup>29</sup> Elder married women are capable of exerting influence over household decision-making processes, and they exert pressure on the young members of the family neglecting their will.<sup>28</sup> Age encompasses not only biological considerations, but also cultural dimensions that determine an individual's level of participation and impact in domestic matters, as well as broader sociocultural, economic and political affairs within the community.<sup>28</sup> Moreover, literature suggests that it will be difficult for sectoral interventions to achieve freedom from the long-awaited emancipation of women from patriarchal

institutions and culture, as well as the abolition of child marriage.<sup>29,30</sup>

A study concurs with the current findings, arguing that reproductive rights afford individuals the autonomy to determine whether or not their bodies are capable of bearing children.<sup>13</sup> Most university students get sensitised very late.<sup>16</sup> Information regarding family planning methods that are safe, effective, affordable and socially acceptable, should be accessible to young adults.<sup>31</sup> The sustainable development goal also emphasizes women's reproductive rights.<sup>17</sup> It is strongly advocated that all university curriculums should incorporate necessary literature to prepare young adults to secure their reproductive needs, especially females.<sup>31</sup>

The current study showed the medical and non-medical students had significant difference in knowledge regarding the use of contraception at an early age and its use can prevent STDs. A study stated that nearly half of the students had adequate knowledge about contraception methods.<sup>30</sup> Reproductive rights as an essential value premise and requirement of all family planning programmes led to the development of reproductive rights approaches to reproductive health, including sexual health.<sup>30</sup> It is postulated that increased awareness and understanding of reproductive rights contribute to a rise in the utilisation of contraception and birth planning services.<sup>32</sup> It is the need of the day to incorporate reproductive rights perspectives into conventional population control programmes that include enhancing the degree of understanding regarding reproductive rights, and strengthening the right to access healthcare systems.<sup>32</sup> Despite the prevailing focus on reproductive rights within family planning policies of developing nations, efforts to educate women about reproductive rights values have been minimal.<sup>32</sup> The awareness of these rights among the beneficiaries has been limited to a set of women, primarily due to the pervasive social inequalities that have resulted in the marginalisation of a significant portion of the female population.<sup>29</sup> By incorporating knowledge of reproductive rights into reproductive health decision-making, women will have more options and opportunities to obtain necessary medical care.<sup>29</sup> This discovery emphasises the criticality of a robust healthcare system, which is essential for promoting contraceptive utilisation.<sup>31</sup> Enhancing the understanding of contraceptive usage among women in reproductive age groups is linked to the promotion of healthcare utilisation and lead may to a substantial rise in contraceptive adoption rates.<sup>33</sup>

The current study has limitations as it did not assess the association of knowledge level with gender and the academic year of the undergraduate subjects.

## Conclusion

There was a significant difference in knowledge level between medical and non-medical students with respect to supportive attitude, premarital counselling and stigma, conscious decision, and use of contraception. The findings emphasised the need to create awareness among young adults. Furthermore, in order to promote social justice and awareness of reproductive rights, and to stop cases of coercion, exploitation and abuse pertaining to reproductive health decisions, laws and policies pertaining to reproductive rights have to be incorporated into the curriculum of educational institutions.

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**HA:** Concept, design, data acquisition, analysis, interpretation, drafting, revision, final approval and agreement to be accountable for all aspects of the work.

**HA & FS:** Drafting, revision, final approval and agreement to be accountable for all aspects of the work.