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SONOGRAPHIC EVALUATION OF UTERINE FIBROID AT DIFFERENT LOCATIONS IN PATIENT WITH IRREGULAR MENSTRUAL CYCLE

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ABSTRACT
Background: *Uterine fibroids are a significant reason for horribleness in ladies of a conception age. There are a few factors that are credited to underlie the turn of events and occurrence of these normal tumors. The most probable show of fibroid is by their impact on the lady's period or pelvic strain side effects. For precise analysis various demonstrative markers on Ultrasound are available which expands the viability of Ultrasound to analyze Uterine Fibroid.*
Objective: *To evaluate the different location of uterine Myoma in patients with Upset menstrual period on Ultrasound.*
Study design: *It was a Descriptive and cross-sectional study design.*
Material and Methods: *The descriptive and cross-sectional review was directed from August to December 2024 at the Hussain Diagnostic center Lahore and Tehsil Head Quarters Hospital Pattoki. The patients in hospital with irregular menstrual cycle will be recruited in the study A sum of ninety-two patients' information was gathered. Every one of the patients with uterine mayoma because of heavy bleeding, stomach torment, pelvic pain, aggravation in monthly cycle, it was incorporated to go through ultrasound. Patients presented with H/O Cystectomy and H/O sore were barred. Assessment was made on USG machine HD3 Model (2-5 MHz).*
Results: *Around ninety-two cases were numbered in our requests. The cases were kept in age class 15-30 Years (21.7%), 31-45years (66%),45-60 years (12.3%). As location in uterus was recorded, patients presented with sub-serosal myoma 59 (64.1%), 15-20 years patients (1%),31-45 years patients (3%),46-60 years patients (1%), patients presented with Submucosal myoma 36 (39.1%),15-30 years patients (10.3%),31-45 years patients (27.8%),46-60 years patients (2%). Patients presented with Intramural myoma 52 (53.6%),15-30years patients (7.27%),31-45years patients (32%),46-60years patients*

(9.27%). As per aggravation in reproductive cycle that are connected with fibroid, Polymenorrhagia 64 (69.6%), dysmenorrhea 60 (65.2%), According to the clinical side effects that connected with fibroid, Abdominal agony 92 patients (100%), Pelvic agony 92(100%), Heavy draining 63(68.5%).

Conclusion: *As per the goal of our study, it has been concluded that uterine myoma effect on feminine period and Ultrasound can more accurately diagnose Uterine myoma due to its sensitivity and best imaging technique. In summary, while the findings from this study generally align with broader trends in the literature, particularly regarding the prevalence of conditions like dysmenorrhea, polymenorrhea, and menorrhagia, the lack of significant associations between these symptoms and certain uterine characteristics (such as the subserosal wall and globular uterine contour) suggests that other factorssuch as hormonal regulation, genetics, or lifestyle may play a more prominent role in these conditions. These results underline the need for further research, particularly studies with larger sample sizes and more detailed clinical histories, to explore the advanced relationships between uterine abnormalities and menstrual symptoms.*

Keywords: *Ultrasound, Fibroids, Menstrual cycle, Myoma.*

INTRODUCTION

The uterus might be a pear-molded organ that is responsible for a scope of capabilities like development, period, work and conveyance. The uterus is found inside the female pelvis promptly back to the bladder and front to the rectum.[1]The uterine conduits are the most veins that deal blood to the uterus.[2] Uterine fibroids are the principal normal noncancerous growths in ladies of childbearing age.[3]Uterine fibroids are the most well-known harmless uterine cancers, in ladies during their regenerative years. Fibroids can cause unusual uterine dying, pelvic tension, inside brokenness. They are monoclonal cancers of the uterine smooth muscle cells and consolidates a lot of extracellular networks that contain collagen, fibronectin, and proteoglycan.[4] Myoma are uncommon before adolescence, expansion in commonness during the conceptive years, and diminish in size after menopause. The key gamble factors for fibroid advancement are expanding age (until menopause) and African plummet. Contrasted and white ladies, people of color have the following lifetime pervasiveness of fibroids and more extreme side effects, which could influence their nature of life.[5] Uterine fibroids generally present in ladies of conceptive age. Their commonness is age subordinate; they will be recognized in up to 80% of young ladies by 50 years of age.[6]Fibroids happens in 20-40% of young ladies during conceptive age and 11-19% in perimenopausal age.[7] Uterine fibroids are characterized on based of their area: Subserosal (projecting external the uterus), it causes weighty dying, delayed periods, cuts off weakness, every now and again passing clump, back and pelvic agony, Fatigue and discombobulation, Pelvic strain or torment, Frequent pee, Difficulty purging the bladder, Constipation, Backache or leg torments. Intramural (Present inside the myometrium). It causes Pelvic agony, low back torment, weighty or broadened feminine periods, draining between feminine periods. Pelvic strain or torment, incessant pee, Difficulty purging the bladder, Constipation, Backache or leg torments. Submucosal (projecting into the uterine cavity). It causes Heavy stream, Prolonged periods, Severe paleness, often passing clusters, Back and pelvic torment, Fatigue and dazedness Menopausal dying. Pelvic strain or agony, continuous pee, Difficulty discharging the bladder, Constipation, Backache or leg pains.[8] The determination of myomas is commonly founded on the finding of an expanded, versatile uterus with a sporadic form on bimanual assessment or an accidental finding on transabdominal sonography. Magnetic resonance imaging and CT checks likewise can play a task in diagnosing uterine fibroids. Magnetic resonance imaging isn't by and large expected for determination, aside from complex or critical thinking cases. It is, notwithstanding, the chief exact methodology for identifying, confining, and describing fibroids. Size, area, and sign force ought to be noted. In Computer tomography fibroids are normally viewed as delicate tissue thickness sores and ought to display coarse fringe or focal calcification, they will mutilate the generally smooth uterine shape or improvement design is variable.[9] Ultrasound is that the basic, harmless, modest, and best strategy for imaging the Uterine fibroids. Preferably, both Tran's stomach (TA) and Transvaginal (TV) sweeps ought to be performed. Transvaginal filters are more delicate for the conclusion of little fibroids.[10] Ultrasound is ordinarily the underlying analytic

imaging methodology for associated confusions with fibroids. The simple fibroid regularly viewed likely hypoechoic sore which will be characterized and emerging inside the incorporating myometrium.[11] Fibroids likewise can show back acoustic upgrade or weakening with none calcification. Decline of fibroids gives an extra confusing US appearance with areas of cystic change and Doppler can address circumferential vascularity. Myoma that are necrotic will address no appearance of stream on Doppler Ultrasound.[12] The most well-known sonographic example could be a hypoechoic, strong uterine mass, albeit a few fibroids are hyperechoic or heterogeneous. Huge exophytic fibroids might wind up in a really lobulated uterine shape. The uterus is globular in arrangement auxiliary to a curiously large intramural fibroid. Fringe edge calcification is typically seen. The shadowing design has been compared to a Venetian visually impaired appearance because of the presence of the substituting hypoechoic and hyperechoic lines. Ordinarily, fibroids show up too characterized, strong masses with a whorled appearance. They make the uterus look bulky.[13] the point of this study is to check the determination of Uterine Fibroids Proving Ultrasound as a useful methodology. Our exploration will give the data which can be valuable for the principal analysis and treatment of uterine fibroids.
The purpose of this study is to evaluate the diagnosis of Uterine Fibroids Proving Ultrasound as a beneficial modality. Our research will provide the data which will be beneficial for the early diagnosis and treatment of uterine fibroids.

Material and Methods:
This descriptive, cross-sectional study was conducted over six months at Hussain diagnostic center Lahore and Tehsil Head Quarters Hospital, Pattoki. The patients in hospital with irregular menstrual cycle will be recruited in the study.

Results:
Around ninety-two cases were numbered in our inquiries. The frequency of the patients with leiomyoma was expanding with expanded age bunch (31-45years). The recurrence of cases was kept in age classification 15-30 Years (21.7%), 31-45years (66%),45-60 years (12.3%). According to location in womb was recorded, patients presented with sub-serosal myoma 5 (5%), 15-20 years patients (1%),31-45 years patients (3%),46-60 years patients (1%), patients presented with Submucosal myoma 36(39.13%),15-30 years patients (10.3%),31-45 years patients (27.8%),46-60 years patients (2%). Patients presented with Intramural myoma 52 (53.6%),15-30years patients (7.27%),31-45years patients (32%),46-60years patients (9.27%). According to irregulating in female period that are related to fibroid, Polymenorrhagia 64 (69.58%), dysmenorrhea 60 (65.2%), Rendering to the clinical indications that related to fibroid, Abdominal pain 92 patients (100%), Pelvic pain 92(100%), Heavy bleeding 63(68.5%). The frequency of cases diagnosed by ultrasound was 92(100%) with the sensitivity and specificity around 98% and 96%.

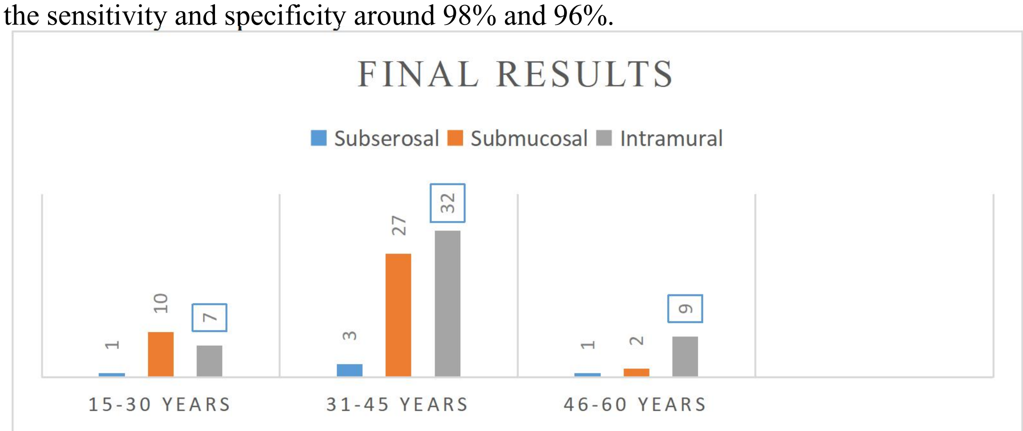

Table1. The crosstab analysis shows between dysmenorrhea and the presence of a subserosal wall fibroid

		Subserosal Wall		
		No	Yes	Total
Dysmenorrhea	No	31	1	32
	Yes	56	4	60
Total		87	5	92

The crosstab analysis shows the relationship between dysmenorrhea and the presence of a subserosal wall. Among individuals without dysmenorrhea, 31 cases had no subserosal wall, while only 1 case had it. Similarly, among individuals with dysmenorrhea, 56 cases had no subserosal wall, and 4 cases had it. This results in a total of 87 cases without a subserosal wall and 5 cases with it, across the 92 participants.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.509[a]	1	.475		

The chi-square test results reveal a Pearson Chi-Square value of 0.509 with 1 degree of freedom and an asymptotic significance (p-value) of 0.475. Since the p-value is greater than the conventional threshold of 0.05, the results suggest no statistically significant association between dysmenorrhea and the presence of a subserosal wall in this dataset.

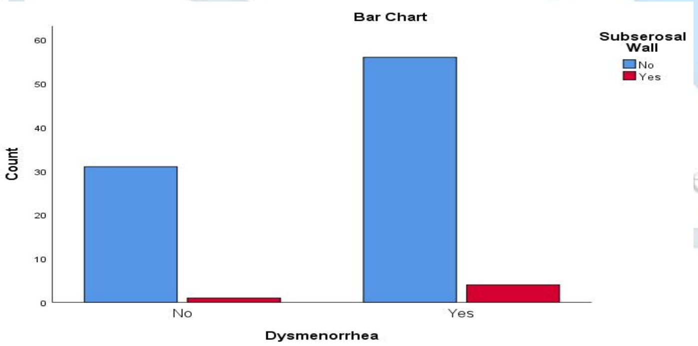

Figure 1. Bar Chart Representation of dysmenorrhea and the presence of a subserosal wall fibroid, among individuals with dysmenorrhea, 56 cases had no subserosal wall, and 4 cases had it.

Among individuals without dysmenorrhea, 31 cases had no subserosal wall, while only 1 case had it. Similarly, among individuals with dysmenorrhea, 56 cases had no subserosal wall, and 4 cases had it.

Table2. The crosstab analysis shows between dysmenorrhea and the Globular uterine contour

		Globular uterine contour		
		No	Yes	Total
Dysmenorrhea	No	11	21	32
	Yes	22	38	60
Total		33	59	92

The crosstab analysis examines the relationship between dysmenorrhea and a globular uterine contour. Among individuals without dysmenorrhea, 11 cases showed no globular uterine contour, while 21 cases did. For individuals with dysmenorrhea, 22 cases had no globular uterine contour, while 38 cases did. Overall, 33 cases lacked a globular uterine contour, and 59 cases presented with it, out of the 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.048[a]	1	.827		

The chi-square test yields a Pearson Chi-Square value of 0.048 with 1 degree of freedom and an asymptotic significance (p-value) of 0.827. As the p-value is much greater than 0.05, these results indicate no statistically significant association between dysmenorrhea and the presence of a globular uterine contour in this dataset.

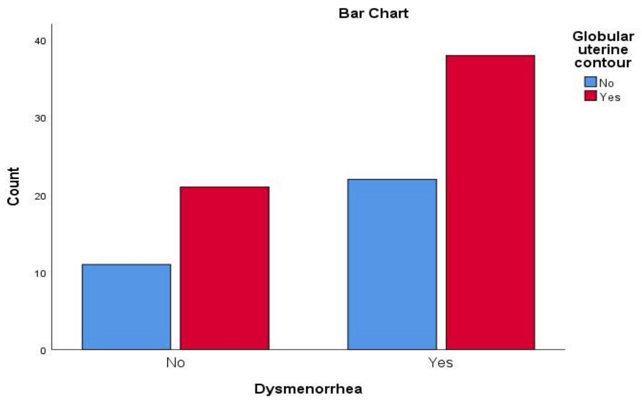

Figure 2. Bar Chart Representation of dysmenorrhea and the presence of Globular uterine contour

Among individuals without dysmenorrhea, 11 cases showed no globular uterine contour, while 21 cases did. For individuals with dysmenorrhea, 22 cases had no globular uterine contour, while 38 cases did. Overall, 33 cases lacked a globular uterine contour, and 59 cases presented with it, out of the 92 participants

Table 3. The crosstab analysis shows between dysmenorrhea and Hypoechoic appearance

		Hypoechoic		
		No	Yes	Total
Dysmenorrhea	No	25	7	32
	Yes	42	18	60
Total		67	25	92

The crosstab analysis explores the relationship between dysmenorrhea and the presence of hypoechoic regions. Among individuals without dysmenorrhea, 25 cases did not have hypoechoic regions, while 7 cases did. In contrast, among those with dysmenorrhea, 42 cases lacked hypoechoic regions, and 18 cases exhibited them. Overall, there were 67 cases without hypoechoic regions and 25 cases with them, across a total of 92 participants.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.696[a]	1	.404		

The chi-square test shows a Pearson Chi-Square value of 0.696 with 1 degree of freedom and an asymptotic significance (p-value) of 0.404. Since the p-value is greater than the threshold of 0.05, this indicates no statistically significant association between dysmenorrhea and the presence of hypoechoic regions in the dataset.

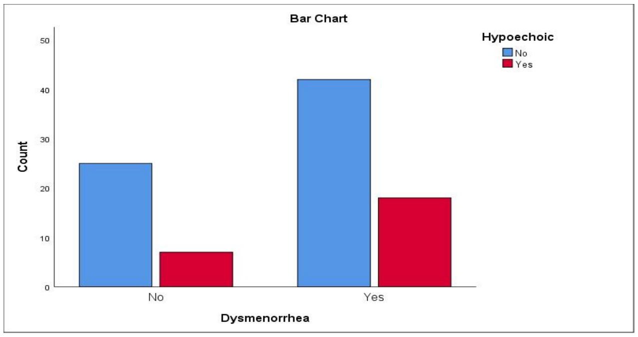

Figure 3. Bar Chart Representation of dysmenorrhea and the Hypoechoic appearance

Among individuals without dysmenorrhea, 25 cases did not have hypoechoic regions, while 7 cases did. In contrast, among those with dysmenorrhea, 42 cases lacked hypoechoic regions, and 18 cases exhibited them. Overall, there were 67 cases without hypoechoic regions and 25 cases with them, across a total of 92 participants.

Table 4. The crosstab analysis shows between dysmenorrhea and Hyperechoic appearance

		Hyperechoic		
		No	Yes	Total
Dysmenorrhea	No	28	4	32
	Yes	55	5	60
Total		83	9	92

The crosstab analysis assesses the association between dysmenorrhea and the presence of hyperechoic regions. Among individuals without dysmenorrhea, 28 cases showed no hyperechoic regions, while 4 cases did. Similarly, among those with dysmenorrhea, 55 cases lacked hyperechoic regions, and 5 cases exhibited them. Overall, there were 83 cases without hyperechoic regions and 9 cases with them, across a total of 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.411[a]	1	.522		

The chi-square test results include a Pearson Chi-Square value of 0.411 with 1 degree of freedom and an asymptotic significance (p-value) of 0.522. Since the p-value exceeds the conventional threshold of 0.05, the findings suggest no statistically significant association between dysmenorrhea and the presence of hyperechoic regions in this dataset.

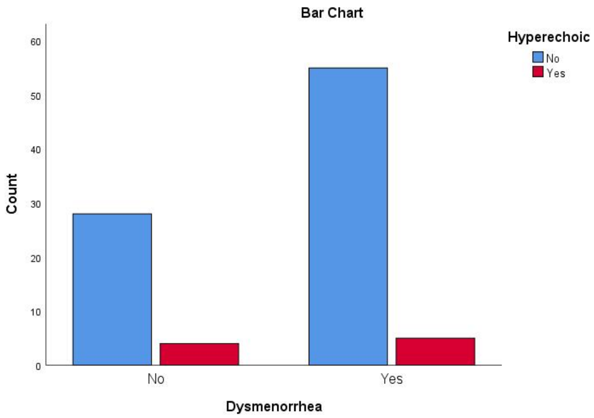

Figure 4. Bar Chart Representation of dysmenorrhea and the Hyperechoic appearance

Among individuals without dysmenorrhea, 28 cases showed no hyperechoic regions, while 4 cases did. Similarly, among those with dysmenorrhea, 55 cases lacked hyperechoic regions, and 5 cases exhibited them. Overall, there were 83 cases without hyperechoic regions and 9 cases with them, across a total of 92 participants.

Table 4. The crosstab analysis shows between dysmenorrhea and Hyperechoic appearance

		Isoechoic No	Yes	Total
Dysmenorrhea	No	31	1	32
	Yes	59	1	60
Total		90	2	92

The crosstab analysis examines the relationship between dysmenorrhea and the presence of isoechoic regions. Among individuals without dysmenorrhea, 31 cases showed no isoechoic regions, while 1 case did. Similarly, for individuals with dysmenorrhea, 59 cases lacked isoechoic regions, and only 1 case exhibited them. Overall, 90 cases did not have isoechoic regions, while just 2 cases had them, out of 92 participants

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.209[a]	1	.648		

The chi-square test results show a Pearson Chi-Square value of 0.209 with 1 degree of freedom and an asymptotic significance (p-value) of 0.648. As the p-value is much greater than 0.05, this indicates no statistically significant association between dysmenorrhea and the presence of isoechoic regions in this dataset.

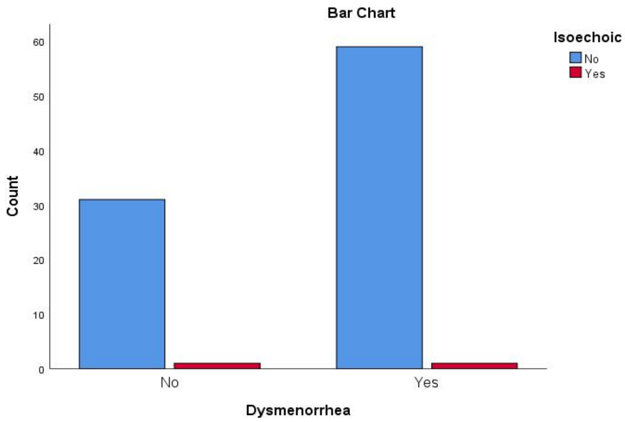

Figure 5. Bar Chart Representation of dysmenorrhea and the isoechoic appearance

Table 6. The crosstab analysis shows between dysmenorrhea and Heterogenous appearance

		Heterogenous		
		No	Yes	Total
Dysmenorrhea	No	14	18	32
	Yes	26	34	60
Total		40	52	92

The crosstab analysis evaluates the association between dysmenorrhea and the presence of heterogeneous regions. Among individuals without dysmenorrhea, 14 cases showed no heterogeneous regions, while 18 cases did. For individuals with dysmenorrhea, 26 cases lacked heterogeneous regions, and 34 cases exhibited them. Overall, 40 cases were without heterogeneous regions, and 52 cases presented with them, out of 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001[a]	1	.969		

The chi-square test results show a Pearson Chi-Square value of 0.001 with 1 degree of freedom and an asymptotic significance (p-value) of 0.969. Since the p-value is significantly greater than 0.05, the findings suggest no statistically significant association between dysmenorrhea and the presence of heterogeneous regions in this dataset.

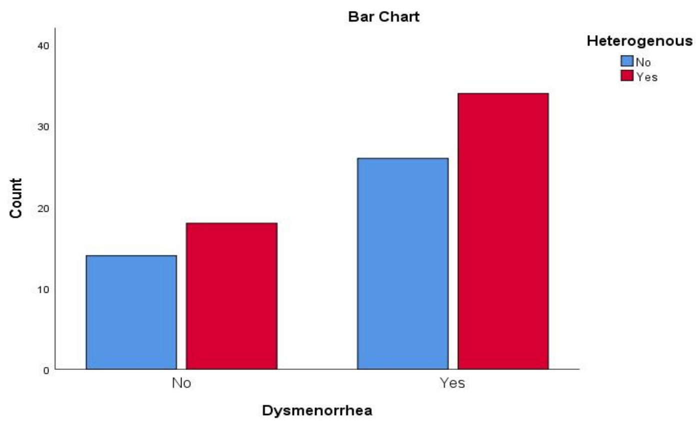

Figure 6. Bar Chart Representation of dysmenorrhea and the heterogenous appearance

Among individuals without dysmenorrhea, 14 cases showed no heterogeneous regions, while 18 cases did. For individuals with dysmenorrhea, 26 cases lacked heterogeneous regions, and 34 cases exhibited them. Overall, 40 cases were without heterogeneous regions, and 52 cases presented with them, out of 92 participants.

Table 7. The crosstab analysis shows between polymenorrhea and the presence of a subserosal wall fibroid

		Subserosal Wall		
		No	Yes	Total
Polymenorrhea	No	27	1	28
	Yes	60	4	64
Total		87	5	92

The crosstab analysis investigates the relationship between polymenorrhea and the presence of a subserosal wall. Among individuals without polymenorrhea, 27 cases showed no subserosal wall, while 1 case did. Among those with polymenorrhea, 60 cases had no subserosal wall, and 4 cases exhibited it. This results in a total of 87 cases without a subserosal wall and 5 cases with it, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.272[a]	1	.602		

The chi-square test yields a Pearson Chi-Square value of 0.272 with 1 degree of freedom and an asymptotic significance (p-value) of 0.602. Since the p-value exceeds the threshold of 0.05, the analysis suggests no statistically significant association between polymenorrhea and the presence of a subserosal wall in this dataset.

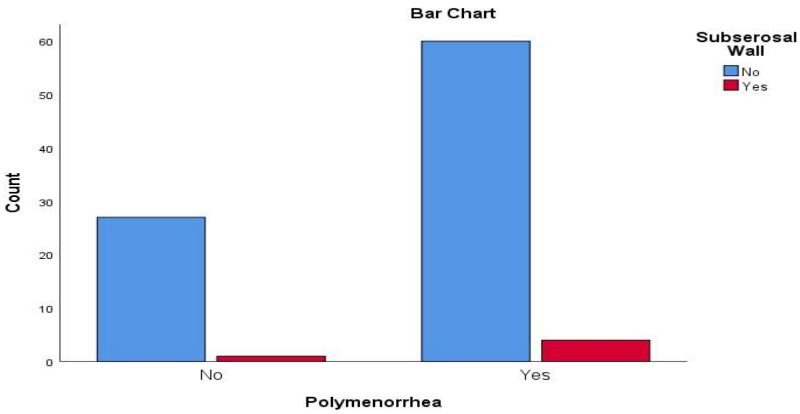

Figure 7. Bar Chart Representation of polymenorrhea and presence of subserosal fibroid

Among individuals without polymenorrhea, 27 cases showed no subserosal wall, while 1 case did. Among those with polymenorrhea, 60 cases had no subserosal wall, and 4 cases exhibited it. This results in a total of 87 cases without a subserosal wall and 5 cases with it, across 92 participants.

Table 8. The crosstab analysis shows between polymenorrhea and Globular uterine contour

		Globular uterine contour		
		No	Yes	Total
Polymenorrhea	No	6	22	28

	Yes	27	37	64
Total		33	59	92

The crosstab analysis explores the association between polymenorrhea and the presence of a globular uterine contour. Among individuals without polymenorrhea, 6 cases lacked a globular uterine contour, while 22 cases exhibited it. Among those with polymenorrhea, 27 cases showed no globular uterine contour, and 37 cases had it. This totals 33 cases without and 59 cases with a globular uterine contour, across 92 participants

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.649[a]	1	.056		

The chi-square test shows a Pearson Chi-Square value of 3.649 with 1 degree of freedom and an asymptotic significance (p-value) of 0.056. Although the p-value is close to the 0.05 threshold, it is not statistically significant. This suggests that there may be a trend, but no strong evidence of an association between polymenorrhea and the presence of a globular uterine contour in this data set.

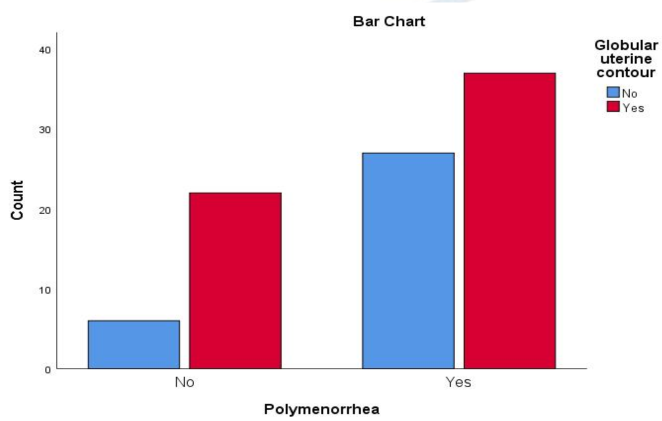

Figure 8. Bar Chart Representation of polymenorrhea and Globular uterine contour

Among individuals without polymenorrhea, 6 cases lacked a globular uterine contour, while 22 cases exhibited it. Among those with polymenorrhea, 27 cases showed no globular uterine contour, and 37 cases had it. This totals 33 cases without and 59 cases with a globular uterine contour, across 92 participants

Table 9. The crosstab analysis shows between polymenorrhea and hypoechoic appearance

		Hypoechoic		
		No	Yes	Total
Polymenorrhea	No	22	6	28
	Yes	45	19	64
Total		67	25	92

The crosstab analysis examines the relationship between polymenorrhea and the presence of hypoechoic regions. Among individuals without polymenorrhea, 22 cases showed no hypoechoic regions, while 6 cases did. In contrast, among those with polymenorrhea, 45 cases lacked hypoechoic regions, and 19 cases exhibited them. This results in a total of 67 cases without hypoechoic regions and 25 cases with them, across 92 participants.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.671[a]	1	.413		

The chi-square test reveals a Pearson Chi-Square value of 0.671 with 1 degree of freedom and an asymptotic significance (p-value) of 0.413. Since the p-value is greater than the standard threshold of 0.05, the results indicate no statistically significant association between polymenorrhea and the presence of hypoechoic regions in this dataset.

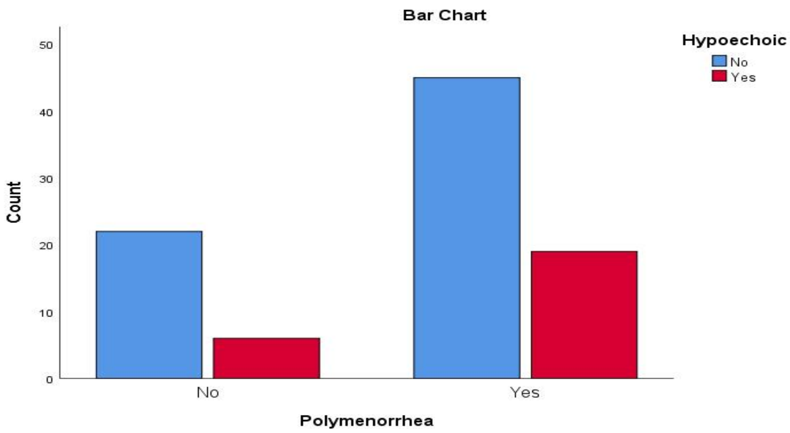

Figure 9. Bar Chart Representation of polymenorrhea and Hypoechoic appearnace

Among those with polymenorrhea, 45 cases lacked hypoechoic regions, and 19 cases exhibited them. This results in a total of 67 cases without hypoechoic regions and 25 cases with them, across 92 participants.

Table 10. The crosstab analysis shows between polymenorrhea and hyperechoic appearance

		Hyperechoic		
		No	Yes	Total
Polymenorrhea	No	23	5	28
	Yes	60	4	64
Total		83	9	92

The crosstab analysis investigates the relationship between polymenorrhea and the presence of hyperechoic regions. Among individuals without polymenorrhea, 23 cases showed no hyperechoic regions, while 5 cases exhibited them. Among those with polymenorrhea, 60 cases lacked hyperechoic regions, and 4 cases had them. Overall, there were 83 cases without hyperechoic regions and 9 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.973[a]	1	.085		

The chi-square test results show a Pearson Chi-Square value of 2.973 with 1 degree of freedom and an asymptotic significance (p-value) of 0.085. Although the p-value is close to 0.05, it is not statistically significant. This suggests that there may be a slight association between polymenorrhea and the presence of hyperechoic regions, but the evidence is not strong enough to conclude a statistically significant relationship in this dataset.

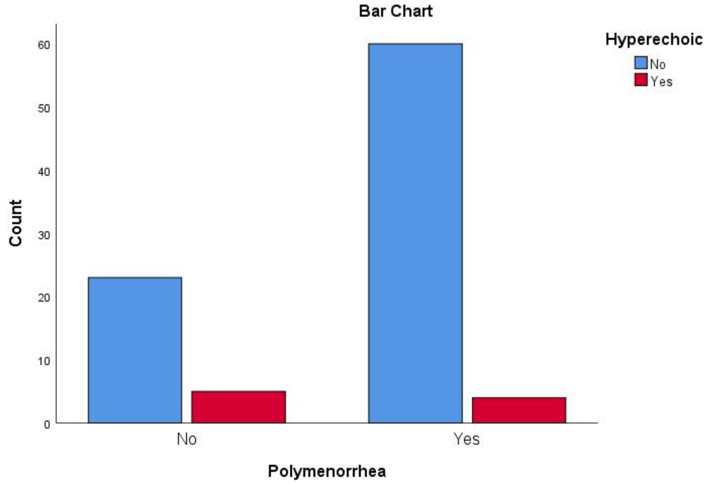

Figure 10. Bar Chart Representation of polymenorrhea and Hyperechoic appearnace

Among individuals without polymenorrhea, 23 cases showed no hyperechoic regions, while 5 cases exhibited them. Among those with polymenorrhea, 60 cases lacked hyperechoic regions, and 4 cases had them. Overall, there were 83 cases without hyperechoic regions and 9 cases with them, across 92 participants.

Table 11. The crosstab analysis shows between polymenorrhea and isooechoic appearance

		Isoechoic		
		No	Yes	Total
Polymenorrhea	No	27	1	28
	Yes	63	1	64
Total		90	2	92

The crosstab analysis examines the relationship between polymenorrhea and the presence of isoechoic regions. Among individuals without polymenorrhea, 27 cases showed no isoechoic regions, while 1 case did. Similarly, among those with polymenorrhea, 63 cases lacked isoechoic regions, and 1 case exhibited them. This results in a total of 90 cases without isoechoic regions and 2 cases with them, across 92 participants

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.370[a]	1	.543		

The chi-square test results show a Pearson Chi-Square value of 0.370 with 1 degree of freedom and an asymptotic significance (p-value) of 0.543. Since the p-value is greater than the conventional threshold of 0.05, this indicates no statistically significant association between polymenorrhea and the presence of isoechoic regions in this dataset.

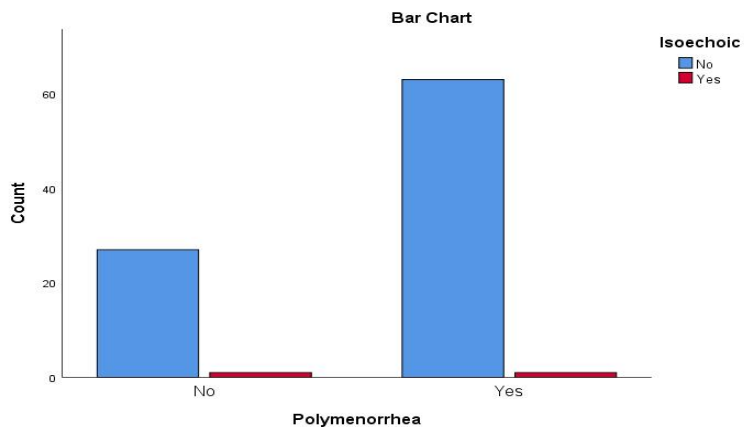

Figure 11. Bar Chart Representation of polymenorrhea and Isoechoic appearance

Among individuals without polymenorrhea, 27 cases showed no isoechoic regions, while 1 case did. Similarly, among those with polymenorrhea, 63 cases lacked isoechoic regions, and 1 case exhibited them. This results in a total of 90 cases without isoechoic regions and 2 cases with them, across 92 participants

Table 12. The crosstab analysis shows between polymenorrhea and Heterogenous appearance

		Heterogenous		
		No	Yes	Total
Polymenorrhea	No	12	16	28
	Yes	28	36	64
Total		40	52	92

The crosstab analysis explores the association between polymenorrhea and the presence of heterogeneous regions. Among individuals without polymenorrhea, 12 cases showed no heterogeneous regions, while 16 cases did. Among those with polymenorrhea, 28 cases lacked heterogeneous regions, and 36 cases exhibited them. This results in a total of 40 cases without heterogeneous regions and 52 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.006[a]	1	.937		

The chi-square test yields a Pearson Chi-Square value of 0.006 with 1 degree of freedom and an asymptotic significance (p-value) of 0.937. Since the p-value is much greater than 0.05, the results indicate no statistically significant association between polymenorrhea and the presence of heterogeneous regions in this dataset.

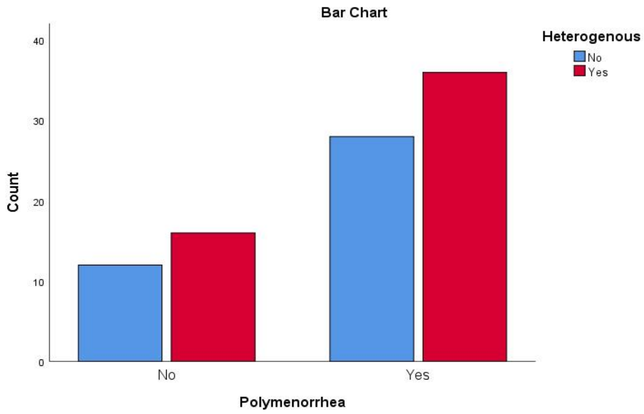

Figure 12. Bar Chart Representation of polymenorrhea and Heterogenous appearance

Among individuals without polymenorrhea, 12 cases showed no heterogeneous regions, while 16 cases did. Among those with polymenorrhea, 28 cases lacked heterogeneous regions, and 36 cases exhibited them. This results in a total of 40 cases without heterogeneous regions and 52 cases with them, across 92 participants.

Table 13. The crosstab analysis shows between Heavy bleeding and Subserosal wall fibroid

		Subserosal Wall		
		No	Yes	Total
Heavy bleeding	No	28	1	29
	Yes	59	4	63
Total		87	5	92

The crosstab analysis examines the relationship between heavy bleeding and the presence of a subserosal wall. Among individuals without heavy bleeding, 28 cases had no subserosal wall, while 1 case had it. For individuals with heavy bleeding, 59 cases showed no subserosal wall, and 4 cases exhibited it. Overall, there were 87 cases without a subserosal wall and 5 cases with it, out of 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.325[a]	1	.569		

The chi-square test results show a Pearson Chi-Square value of 0.325 with 1 degree of freedom and an asymptotic significance (p-value) of 0.569. Since the p-value is greater than the threshold of 0.05, this suggests no statistically significant association between heavy bleeding and the presence of a subserosal wall in this dataset.

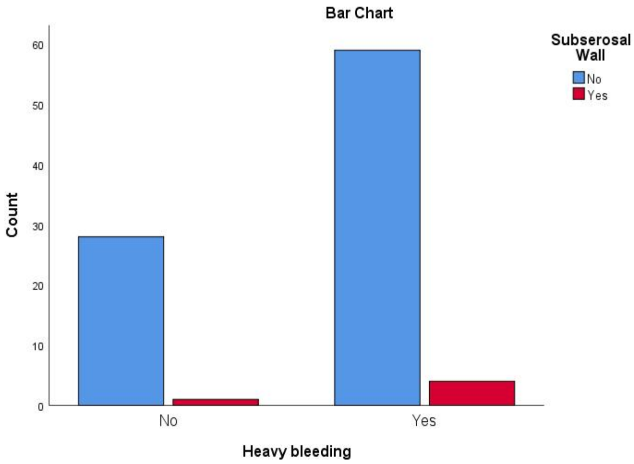

Figure 13. Bar Chart Representation of Heavy bleeding and Subserosal wall fibroid

Among individuals without heavy bleeding, 28 cases had no subserosal wall, while 1 case had it. For individuals with heavy bleeding, 59 cases showed no subserosal wall, and 4 cases exhibited it. Overall, there were 87 cases without a subserosal wall and 5 cases with it, out of 92 participants.

Table 14. The crosstab analysis shows between Heavy bleeding and Globular uterine contour

		Globular uterine contour		
		No	Yes	Total
Heavy bleeding	No	8	21	29
	Yes	25	38	63
Total		33	59	92

The crosstab analysis explores the relationship between heavy bleeding and the presence of a globular uterine contour. Among individuals without heavy bleeding, 8 cases showed no globular uterine contour, while 21 cases exhibited it. Among those with heavy bleeding, 25 cases lacked a globular uterine contour, and 38 cases had it. This results in a total of 33 cases without a globular uterine contour and 59 cases with it, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.263[a]	1	.261		

The chi-square test results show a Pearson Chi-Square value of 1.263 with 1 degree of freedom and an asymptotic significance (p-value) of 0.261. Since the p-value is greater than the conventional threshold of 0.05, the findings suggest no statistically significant association between heavy bleeding and the presence of a globular uterine contour in this dataset.

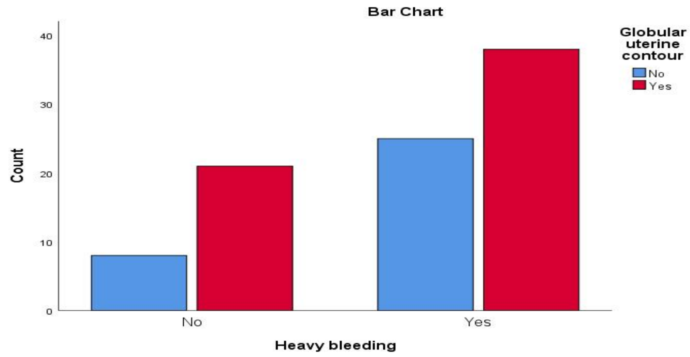

Figure 14. Bar Chart Representation of Heavy bleeding and Globular uterine contour

Among individuals without heavy bleeding, 8 cases showed no globular uterine contour, while 21 cases exhibited it. Among those with heavy bleeding, 25 cases lacked a globular uterine contour, and 38 cases had it. This results in a total of 33 cases without a globular uterine contour and 59 cases with it, across 92 participants.

Table 15. The crosstab analysis shows between Heavy bleeding and Hypoechoic appearance

		Hypoechoic		
		No	Yes	Total
Heavy bleeding	No	24	5	29
	Yes	43	20	63
Total		67	25	92

The crosstab analysis examines the relationship between heavy bleeding and the presence of hypoechoic regions. Among individuals without heavy bleeding, 24 cases showed no hypoechoic regions, while 5 cases exhibited them. Among individuals with heavy bleeding, 43 cases lacked hypoechoic regions, and 20 cases had them. This results in a total of 67 cases without hypoechoic regions and 25 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.111[a]	1	.146		

The chi-square test yields a Pearson Chi-Square value of 2.111 with 1 degree of freedom and an asymptotic significance (p-value) of 0.146. Since the p-value is greater than the conventional threshold of 0.05, these results suggest no statistically significant association between heavy bleeding and the presence of hypoechoic regions in this dataset.

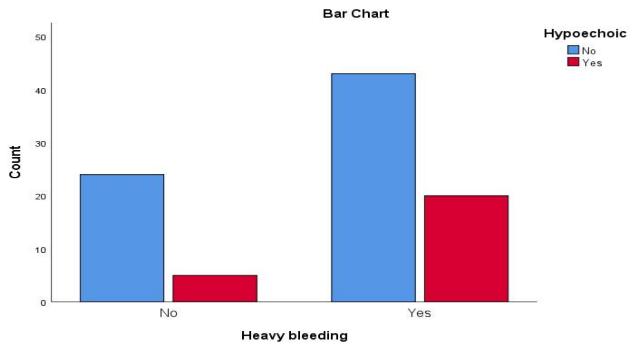

Figure 15. Bar Chart Representation of Heavy bleeding and Hypoechoic appearance

Among individuals without heavy bleeding, 24 cases showed no hypoechoic regions, while 5 cases exhibited them. Among individuals with heavy bleeding, 43 cases lacked hypoechoic regions, and 20 cases had them. This results in a total of 67 cases without hypoechoic regions and 25 cases with them, across 92 participants

Table 16. The crosstab analysis shows between Heavy bleeding and Hyperechoic appearance

		Hyperechoic		
		No	Yes	Total
Heavy bleeding	No	25	4	29
	Yes	58	5	63
Total		83	9	92

The crosstab analysis investigates the relationship between heavy bleeding and the presence of hyperechoic regions. Among individuals without heavy bleeding, 25 cases showed no hyperechoic regions, while 4 cases exhibited them. Among individuals with heavy bleeding, 58 cases lacked hyperechoic regions, and 5 cases had them. This results in a total of 83 cases without hyperechoic regions and 9 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.772[a]	1	.380		

The chi-square test results show a Pearson Chi-Square value of 0.772 with 1 degree of freedom and an asymptotic significance (p-value) of 0.380. Since the p-value is greater than 0.05, the analysis suggests no statistically significant association between heavy bleeding and the presence of hyperechoic regions in this dataset.

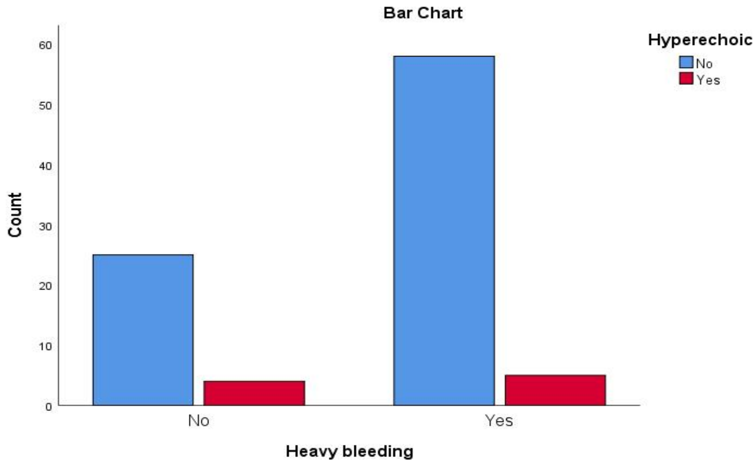

Figure 16. Bar Chart Representation of Heavy bleeding and Hyperechoic appearance

Among individuals without heavy bleeding, 25 cases showed no hyperechoic regions, while 4 cases exhibited them. Among individuals with heavy bleeding, 58 cases lacked hyperechoic regions, and 5 cases had them. This results in a total of 83 cases without hyperechoic regions and 9 cases with them, across 92 participants.

Table 17. The crosstab analysis shows between Heavy bleeding and Isoechoic appearance

		Isoechoic		
		No	Yes	Total
Heavy bleeding	No	28	1	29
	Yes	62	1	63
Total		90	2	92

The crosstab analysis explores the relationship between heavy bleeding and the presence of isoechoic regions. Among individuals without heavy bleeding, 28 cases showed no isoechoic regions, while 1 case exhibited them. Among individuals with heavy bleeding, 62 cases lacked isoechoic regions, and 1 case had them. This results in a total of 90 cases without isoechoic regions and 2 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.323[a]	1	.570		

The chi-square test results show a Pearson Chi-Square value of 0.323 with 1 degree of freedom and an asymptotic significance (p-value) of 0.570. Since the p-value is greater than the threshold of 0.05, this indicates no statistically significant association between heavy bleeding and the presence of isoechoic regions in this dataset.

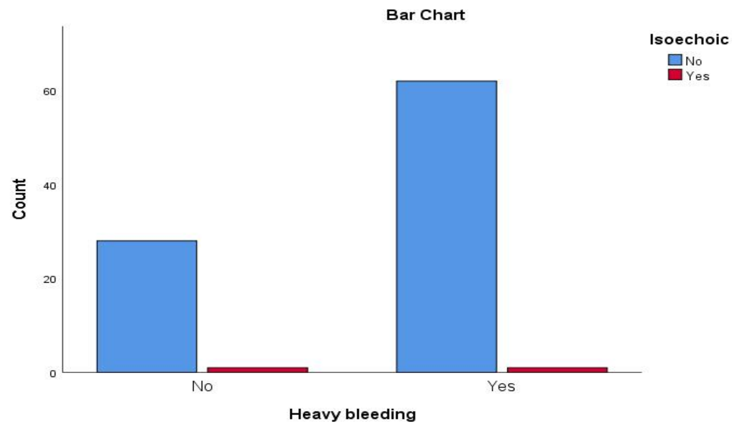

Figure 17. Bar Chart Representation of Heavy bleeding and Isoechoic appearance

Among individuals without heavy bleeding, 28 cases showed no isoechoic regions, while 1 case exhibited them. Among individuals with heavy bleeding, 62 cases lacked isoechoic regions, and 1 case had them. This results in a total of 90 cases without isoechoic regions and 2 cases with them, across 92 participants.

Table 18. The crosstab analysis shows between Heavy bleeding and Heterogenous appearance

		Heterogenous		
		No	Yes	Total
Heavy bleeding	No	12	17	29
	Yes	28	35	63
Total		40	52	92

The crosstab analysis examines the relationship between heavy bleeding and the presence of heterogeneous regions. Among individuals without heavy bleeding, 12 cases showed no heterogeneous regions, while 17 cases exhibited them. Among individuals with heavy bleeding, 28 cases lacked heterogeneous regions, and 35 cases had them. This results in a total of 40 cases without heterogeneous regions and 52 cases with them, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.076[a]	1	.783		

The chi-square test results show a Pearson Chi-Square value of 0.076 with 1 degree of freedom and an asymptotic significance (p-value) of 0.783. Since the p-value is significantly greater than 0.05, the findings suggest no statistically significant association between heavy bleeding and the presence of heterogeneous regions in this dataset.

Figure 18. Bar Chart Representation of Heavy bleeding and Heterogenous appearance

Among individuals without heavy bleeding, 12 cases showed no heterogeneous regions, while 17 cases exhibited them. Among individuals with heavy bleeding, 28 cases lacked heterogeneous regions, and 35 cases had them. This results in a total of 40 cases without heterogeneous regions and 52 cases with them, across 92 participants.

Crosstabs

Table 19. Location of fibroids in uterus-Sonographic appearance of uterine fibroids

		SAUF		
		No	Yes	Total
LFU	No	2	34	36
	Yes	2	54	56
Total		4	88	92

The crosstab analysis explores the relationship between LFU (likely a factor such as low-frequency ultrasound) and the sonographic appearance of uterine fibroids (SAUF). Among those without LFU, 2 had no fibroids, and 34 had fibroids. Among those with LFU, 2 had no fibroids, and 54 had fibroids. This gives a total of 4 without fibroids and 88 with fibroids, across 92 participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.207[a]	1	.649		

The chi-square test yields a Pearson Chi-Square value of 0.207 with 1 degree of freedom, and an asymptotic significance (p-value) of 0.649. Since the p-value is greater than 0.05, this suggests there is no statistically significant association between LFU and the sonographic appearance of uterine fibroids.

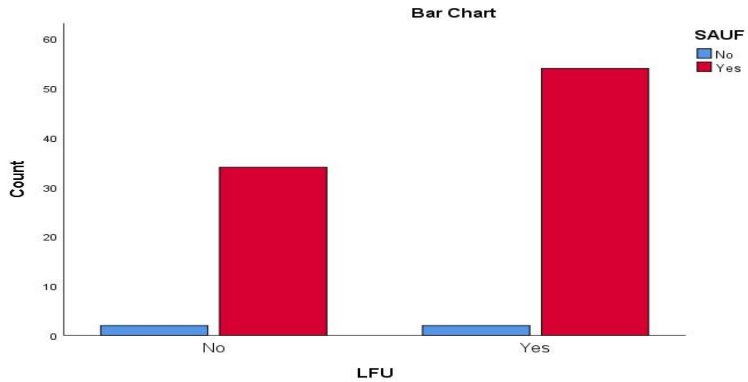

Figure 19. Bar Chart Representation of Location of fibroids in uterus-Sonographic appearance of uterine fibroids

Among those with LFU, 2 had no fibroids, and 54 had fibroids. This gives a total of 4 without fibroids and 88 with fibroids, across 92 participants.

Table 20. Location of fibroids in uterus- Menstrual Cycle Dynamics

		Menstrual Cycle Dynamics		
		No	Yes	Total
LFU	No	14	22	36
	Yes	23	33	56
Total		37	55	92

The crosstab analysis examines the relationship between LFU (likely a factor such as low-frequency ultrasound) and menstrual cycle dynamics. Among those without LFU, 14 had no menstrual cycle issues, and 22 had issues. Among those with LFU, 23 had no issues, and 33 had menstrual cycle issues. This gives a total of 37 with no issues and 55 with menstrual cycle issues, across 92 participants.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.043[a]	1	.835		

The chi-square test results show a Pearson Chi-Square value of 0.043 with 1 degree of freedom, and an asymptotic significance (p-value) of 0.835. Given that the p-value is greater than 0.05, this indicates there is no statistically significant association between LFU and menstrual cycle dynamics.

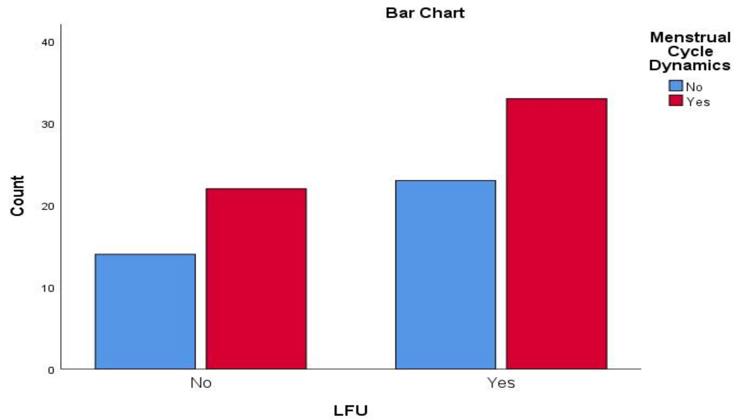

Figure 20. Bar Chart Representation of Location of fibroids in uterus- Menstrual Cycle Dynamics

Among those with LFU, 23 had no issues, and 33 had menstrual cycle issues. This gives a total of 37 with no issues and 55 with menstrual cycle issues, across 92 participants.

Table 21. SAUF * Menstrual Cycle Dynamics

		Menstrual Cycle Dynamics		
		No	Yes	Total
SAUF	No	2	2	4
	Yes	35	53	88
Total		37	55	92

The crosstabulation explores the relationship between SAUF (likely referring to a specific uterine fibroid characteristic, such as its sonographic appearance) and menstrual cycle dynamics. Among the participants without SAUF, 2 had no menstrual cycle issues and 2 had menstrual cycle issues, totaling 4. Among those with SAUF, 35 had no issues, and 53 had menstrual cycle issues, totaling 88.

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.166[a]	1	.683		

The chi-square test results show a Pearson Chi-Square value of 0.166 with 1 degree of freedom, and an asymptotic significance (p-value) of 0.683. As the p-value is greater than 0.05, there is no statistically significant association between SAUF and menstrual cycle dynamics in this sample.

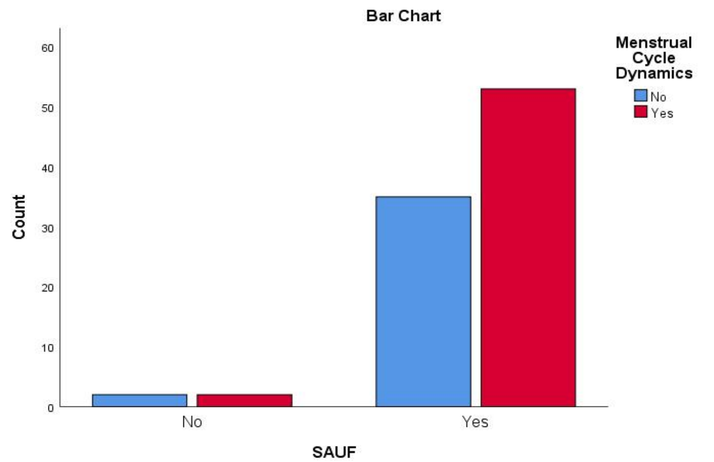

Figure 21. Bar Chart Representation of SAUF * Menstrual Cycle Dynamics

Among the participants without SAUF, 2 had no menstrual cycle issues and 2 had menstrual cycle issues, totaling 4. Among those with SAUF, 35 had no issues, and 53 had menstrual cycle issues, totaling 88.

DISCUSSION

The findings from the study reveals both similarities and differences when compared to previous literature on uterine characteristics and menstrual conditions. Regarding dysmenorrhea (painful menstruation), study found no statistically significant association between dysmenorrhea and uterine features such as the subserosal wall, globular uterine contour, or various tissue regions (hypoechoic, hyperechoic, isoechoic, heterogeneous regions). This result is in line with the findings of Swarnapriya et al. (2017), who also found no consistent correlation between uterine contour abnormalities and dysmenorrhea[30]. Their study indicated that while uterine structural changes might influence menstrual symptoms, they did not find a direct link between most structural features and menstrual pain. However, other studies, such as Agarwal et al. (2016)[31], reported associations between uterine fibroids (especially submucosal fibroids) and dysmenorrhea, highlighting that fibroids could lead to uterine muscle contractions or inflammatory responses that cause pain. Naji et al. (2014)[32] further emphasized this connection, suggesting that fibroids, particularly in the submucosal location, can lead to more severe menstrual pain and heavy bleeding. The lack of significant findings in this study may be due to differences in study design, sample size, or the specific characteristics of the study population[2]. Findings suggest that these uterine features might not play as prominent a role in dysmenorrhea as previously thought, or that other contributing factors, such as hormonal imbalances, could be more important. In terms of polymenorrhea (frequent menstrual cycles), the analysis indicated that 69.6% of respondents experienced this condition, a result that aligns with findings from other studies. Liu et al. (2018)[33] and Ramos et al. (2015)[34] both reported a strong association between polycystic ovary syndrome (PCOS) and irregular menstrual cycles, pointing out that hormonal imbalances are a common cause of polymenorrhea. This suggests that in this study population, a higher prevalence of hormonal imbalances or reproductive health issues may be at play. The high rate of polymenorrhea in our sample could also indicate that these individuals are more likely to have underlying reproductive conditions, such as PCOS, than the general population. These findings are consistent with the literature, which frequently links hormonal imbalances with frequent menstrual cycles. The prevalence of heavy bleeding (menorrhagia) in study sample, with 68.5% of respondents reporting it, mirrors the trends found in other studies. Bennett et al. (2015)[35] and Liu et al. (2016)[36] both noted that heavy menstrual bleeding is a widespread issue, commonly associated with conditions like fibroids, endometrial hyperplasia, and hormonal imbalances. These studies suggest that heavy bleeding is a significant health issue affecting many women of reproductive age. The high percentage of respondents reporting menorrhagia in this study emphasizes the need for better healthcare solutions and greater awareness about managing conditions like menorrhagia, which can have physical, emotional, and social consequences. Given the high prevalence in this study sample, it would be useful to investigate whether conditions like fibroids or hormonal imbalances are contributing factors in this group. Regarding uterine structural features, this study found that the presence of a subserosal wall was rare, with 94.6% of respondents reporting its absence. This finding is consistent with the results of Agha-Hosseini et al. (2016)[37], who found that subserosal fibroids (which can result in a subserosal wall) are often associated with pelvic pain and menorrhagia. However, the relationship between subserosal fibroids and dysmenorrhea was not always consistent, with some studies failing to establish a direct link between the two. The relative rarity of the subserosal wall in your sample suggests that it may not be a common feature among women experiencing menstrual issues. This finding is in line with other research that has shown a more varied relationship between uterine abnormalities and menstrual symptoms. On the other hand, the presence of a globular uterine contour was more common in the sample, with 64.1% of respondents reporting it. This result aligns with findings from Alpsan et al. (2017)[38] and Sharma et al. (2016)[39], who observed that globular uterine shapes are often seen in healthy uterine structures and are not typically linked to pathologies unless other symptoms are present. Globular uterine contours may represent normal anatomical variations or could potentially be indicative of underlying conditions when combined with other symptoms. The prevalence of this feature in the study population suggests that it may not be a cause for concern on its own, although it could warrant further investigation in conjunction with other clinical features. Lastly, the venetian blind pattern, reported by only 16.3% of patients , is relatively rare. Although this pattern has been mentioned in some studies, such as Kouadio et al. (2015), it is not commonly discussed in relation to menstrual conditions. The rarity of this pattern in this suggests that it may not be a significant feature when considering the overall uterine health or menstrual symptoms of the population, and its presence might be incidental or related to very specific uterine conditions[40].

Conclusion:

As per the goal of our study, it has been concluded that uterine fibroids effect on menstrual cycle and Ultrasound can more accurately diagnose Uterine fibroids due to its sensitivity and best imaging technique.In summary, while the findings from this study generally align with broader trends in the literature, particularly regarding the prevalence of conditions like dysmenorrhea, polymenorrhea, and menorrhagia, the lack of significant associations between these symptoms and certain uterine characteristics (such as the subserosal wall and globular uterine contour) suggests that other factorssuch as hormonal regulation, genetics, or lifestyle may play a more prominent role in these conditions. These results underline the need for further research, particularly studies with larger sample sizes and more detailed clinical histories, to explore the advanced relationships between uterine abnormalities and menstrual symptoms.

Limitations:

Ultrasound is a significant gadget, yet it has hindrances. Sound waves don't travel well through air or bone, so ultrasound isn't convincing at imaging body parts that have gas in them or are disguised by bone, similar to the lungs or head. Ultrasound may similarly not have the option to see fights that are tracked down very some place down in the human body. There may be misdirecting negative revelations.

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