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Prevalence of infertility and sterility and causes in women in Tripoli-Libya

Anas Abdullah salameh [1]*, Hassan Saleh Abdullatife Saleh

[1]Department of medical laboratories. Higher Institute for Sciences and Technology Sok-Alkhames Msehel-Libya Department of medical laboratories. salamehanas3@gmail.com

[2] Tanta University -Department of ChemistryTanda, Egypt- Hassnsaleh20@yahoo.com

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ABSTRACT

Infertility and sterility a worldwide health issues with a high impact on the individuals involved and society as a whole. The study conducted between March to May 2023 in Ghout alshaal center for infertility and sterility, and al-Masara private clinic. A total 686 questionnaires from target clinics. Objectives of study: to determine common age groups have sterility and infertility, prevalence rate though last five years ago (2018-2022), common causes of infertility and sterility. results showed that there are highly significant statistical differences (P<0.001) in sterile females aged 36-45 compared with those aged 16-25, and 26-35, infertile females aged 26-35, and 36-45 compared with aged 16-25, sterile and infertile females who diagnosed sterile and infertile in 2022, and 2020 compared with 2021, and 2019. Infertile females compared with sterile females. Infertile females have more than one reason compared with male factors and fallopian tube problem; females with infertility have reservation for the answer compared with those have Abortion and ovarian cysts. Conclusion: common age of infertility is 26-35, and 36-45, 2020, 2021, and 2022 have high prevalence rate of sterility, common causes of infertility are more than one reason, male factors, and fallopian tube problem, while causes of poor fertilization are Abortion and ovarian cysts.

Introduction

Infertility is a worldwide health issue with high impact on the individuals involved and the society as a whole Eldib et al., (2018). Infertility is a common problem affecting one couple in six Brugo-Olmedo et al., (2001). Infertility affects about 12-15% of couples globally Royfman et al., (2020). . infertility defined as an inability to become pregnant with a live birth, within 5 years of exposure based upon a consistent union status, lack of contraceptive use, no lactating and maintaining a desire for a child Mascarenhas et al., (2012). prevalence of infertility and sterility are varies between regions and countries and its pattern is different in developed countries than those un-developing regions of the world Cates et al., (1985). So that it was as high as 30 % in Sub Saharan Africa Larsen, (2000). about 12% in some European communities Bentley et al., (2000). and it was nearly 7.4 % in the United States Stephen et al., (2006). Increased infertility in older couples is attributable primarily to declines in fertility rates rather than to absolute sterility Dunson et al., (2004). Causes of infertility can be attributed to male factor, female factor, both male and female factors or unexplained. The male factor can be low sperm count Oligospermia, poor sperm motility Asthenospermia, abnormal sperm morphology Teratospermia, and other abnormalities. Causes of infertility in females include: Ovulation disorders, polycystic ovary syndrome (PCOS), multiple ovarian cysts, hypothalamic dysfunction, premature ovarian insufficiency, damage to Fallopian tubes, endometriosis, uterine or cervical causes, irregular or no menstrual periods, genetic factors Matzuk et al., (2002). In libya online data about prevalence rate of infertility and sterility not available or scanty. So the objectives of study to determine: most common age group have sterility and infertility, prevalence of infertility and sterility though last five years ago (2018-2022), most common causes of infertility and sterility.

Material and methods: This study was conducted between March and May 2023 in Ghout alshaal center for infertility and sterility, and al-Masara privet clinic in Tripoli- Libya. Data were collected by used total 686 questioners from archives of Ghout alshaal center for infertility and sterility and al-Masara privet clinic, department of gynecology) about age, history of diagnosis, Reasons for not having children, Causes of infertility, Causes of poor fertilization. obtained data were expressed by statistic program for windows Spss, (2001). The effect of (age, history of diagnosis, Reasons for not having children, Causes of infertility, Causes of poor fertilization) was determined by chi-square, and Differences between prevalence rate at (P<0.05) was considered statistically significant.

Results

Age Groups regarding to prevalence rate of infertility and sterility

Results reported in this study showed that from the total number of females with infertility and sterility were (686) as presented in table (1) and illustrated in fig (1) the prevalence rate of sterility according to age groups (16-25, 26-35, 36-45, and >45 years old) were (9.5%, 8.60%, 10.20%, and 5.70% respectively), and infertility were (10.9 %, 26.20%, 26.20%, and 2.00% respectively), there are high significant statistical differences (P<0.001) in sterile females who aged 36-45 compared with those aged 16-25and 26-35, also there are significant differences in infertile females aged 26-35, and 36-45 compared with those aged 16-25. But those aged > 45 have no statistical significant in sterility and infertility.

History of diagnosis regarding to prevalence rate of infertility and sterility

Table (2) and fig (2) showed the prevalence rate of sterility, and infertility according to history of diagnosis (before 2018, 2018, 2019, 2020, 2021, and 2022) which was (85.5%, 5 %, 18.1%, 24.3%, 19.2% and 27.8 % respectively). Result appears that there are high significant statistical differences (P<0.001) in sterile and infertile females in 2022 and 2020 compared with 2021, and 2019. But before 2018, and 2018 have no statistical significant in sterility and infertility.

Reasons for not having children regarding to prevalence rate of infertility and sterility

As presented in table (3) and fig (3) prevalence rate of sterility, and infertility respectively according to reasons for not have children was (34%, and 66 % respectively), there are high significant statistical differences (P<0.001) in females with infertility compared with those who have sterility.

Etiology regarding to prevalence rate of infertility

Results as in table (4) and fig (4) the prevalence rate of infertility according to etiology (age, early menopause, low quality eggs, fallopian tube problem, cervical problem, uterine infections, Benign tumor in uterus, unknown reason, Weakened Immune System, male factor, and more than one reason) was (2.6%, 3.6 %, 8.7%, 17.3% , 5.8%, 3.8 %, 2.2%, 6.6%, 3.1%, 15.2%, and 31.2 % respectively), as appears in result there are high significant statistical differences (P<0.001) in females with infertility who have more than one reason compared with male factors and fallopian tube problem. But other reason have no statistical significant in sterility and infertility.

Causes of poor fertilization regarding to prevalence rate of infertility

Table (5) and fig (5) showed prevalence rate of infertility according to causes of poor fertilization (damaged ovum, abortion, ectopic pregnancy, ovarian cysts, endometrial weakness, uterine infections, uterus tumor, congenital anomaly, Overweight, excess hormone than normal, and Reservation for the answer) was (5.7 %, 12.1 %, 1.6%, 10.5% , 1.3%, 1.9%, 5.7 %, 3.5%, 5.8%, 4.7%, and 47.2% respectively), there are high significant statistical differences (P<0.001) appears in females with infertility who have Reservation for the answer compared with those who have Abortion and ovarian cysts. But other causes have no statistical significant on infertility.

Discussion

reported study showed that the common age of infertility were 26-35, 56-45 with prevalence rate (26.2%, 26.8%) the results were lower than data reported by Haleem et al., (2014); Khalid et al., (2022). , but higher than result reported by Dunson et al., (2004). However obtained results showed that prevalence rate of sterility were (34%) and infertilely (66%) the results were higher than data obtained by Dunson et al., (2004). . On other hand the main causes of infertility in carried study were more than one causes (31.2%), male factors (15.2%) which were lower than Brugo-Olmedo et al., (2001); Eldib et al., (2021). , fallopian tube problem (17.8%) which were higher than results reported by Haleem et

al., (2014); Osman, (2010); Razzak et al., (2002); Roig, (2018). , but lower than results reported by Brugo-Olmedo et al., (2001). , and unknown causes (6.6%) which were higher than data obtained by Eldib et al., (2021). but lower than results obtained by Brugo-Olmedo et al., (2001); Haleem et al., (2014); Karimpour et al., (2005); Razzak et al., (2002). However common causes of poor fertilization in conducted study were abortion (12.1%). Poly cystic ovary disease (10.5%) which were lower than results obtained by Abdullah et al., (2021); Eldib et al., (2021). Finally in carried study noticed that most females who married in 2018 were diagnosed as infertile or sterile in 2019, 2020, 2021, 2022 and prevalence rate of infertility were increased gradually in each year.

Conclusion From conducted study we concluded that: Most common Age groups affected with sterility are 36-45, followed by 16-25, and 26-35. And age of infertility was 26-35, 36-45 followed by 16-25. Prevalence rate of infertility and sterility was high in 2022, 2020, followed by 2021, 2019, increased gradually in each year. Prevalence rate of infertility was higher than sterility. Most common causes of infertility were in females have more than one reason, male factor, and fallopian tubes problems. While common causes of poor fertilization are reservation on answer, abortion, and ovarian cysts.

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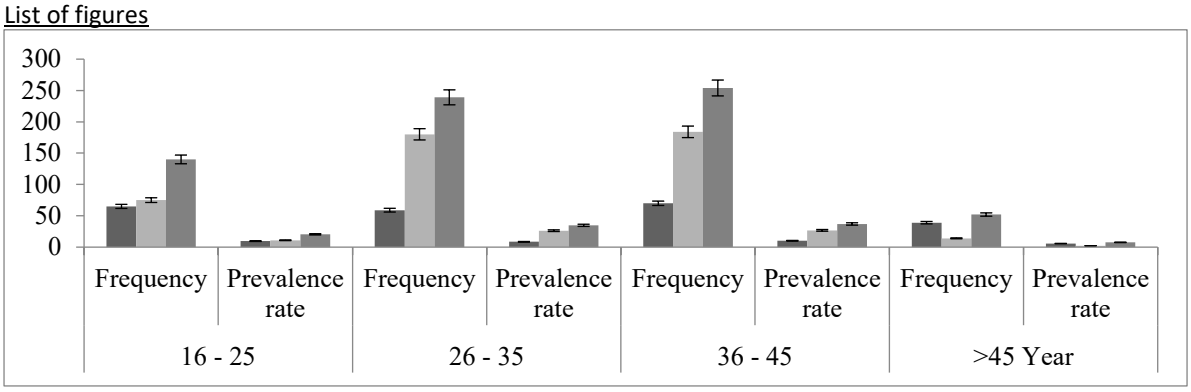

Fig 1: Showed Age Groups regarding to prevalence rate of infertility and sterility

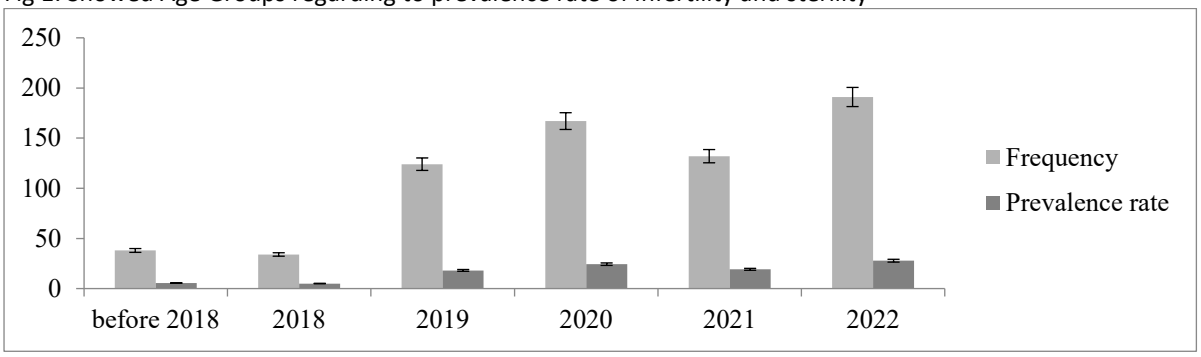

Fig 2: Showed history of diagnosis regarding to prevalence rate of infertility and sterility

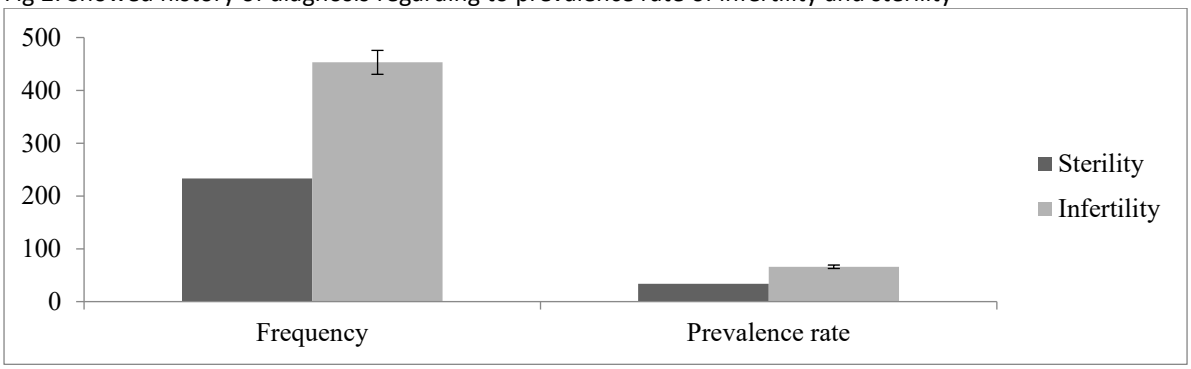

Fig 3: Showed Reasons for not having children regarding to prevalence rate of infertility and sterility.

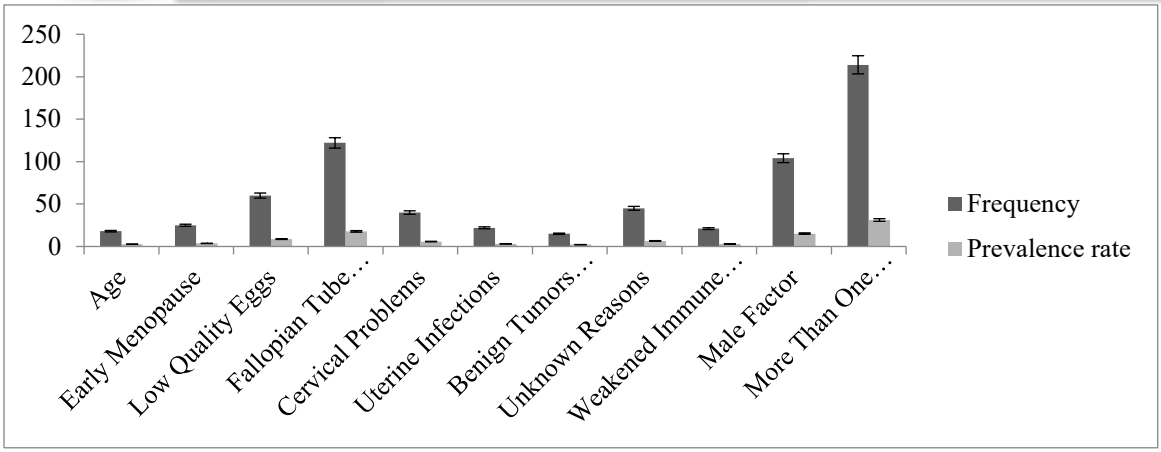

Fig 4: Showed causes regarding to prevalence rate of infertility.

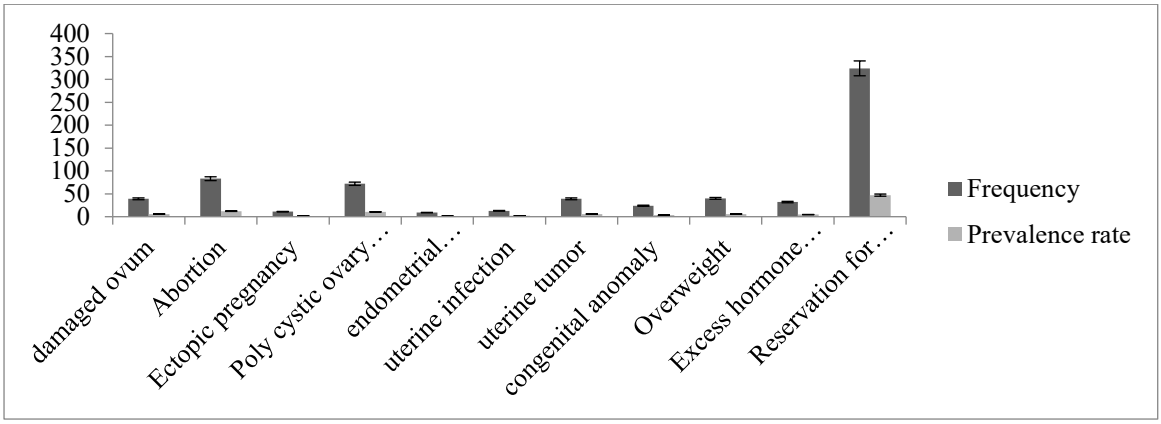

Fig 5: Showed Causes of poor fertilization regarding to prevalence rate of infertility.

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Table1: showed Age Groups regarding to prevalence rate of infertility and sterility

Age Groups		Sterility	Infertility	Total
16 - 25	Frequency	65	75	140
	Prevalence rate	9.50[b]	10.90[b]	20.40
26 - 35	Frequency	59	180	239
	Prevalence rate	8.60[b]	26.20[c]	34.80
36 - 45	Frequency	70	184	254
	Prevalence rate	10.20[c]	26.80[c]	37.00
>45 Year	Frequency	39	14	52
	Prevalence rate	5.70[a]	2.00[a]	7.60
Total	Frequency	233	453	686
	Prevalence rate	34.00%	66.00%	100

Within rows, prevalence rates with different small alphabetical superscripts are significantly different at least at *P*<0.05.

Table2: Showed history of diagnosis regarding to prevalence rate of infertility and sterility

history of diagnosis	Frequency	Prevalence rate
before 2018	38	5.5[a]
2018	34	5[a]

2019	124	18.1[b]
2020	167	24.3[c]
2021	132	19.2[b]
2022	191	27.8[c]
Total	686	100

Within rows, prevalence rates with different small alphabetical superscripts are significantly different at least at *P*<0.05.

Table 3 Showed Reasons for not having children regarding to prevalence rate of infertility and sterility

Reasons for not having children	Frequency	Prevalence rate
Sterility	233	34[a]
Infertility	453	66[b]
Total	686	100

Within rows, prevalence rates with different small alphabetical superscripts are significantly different at least at *P*<0.05.

Table4: Showed Etiology regarding to prevalence rate of infertility

Causes Of Infertility	Frequency	Prevalence rate
Age	18	2.6[a]
Early Menopause	25	3.6[a]
Low Quality Eggs	60	8.7[a]
Fallopian Tube Problems	122	17.8[b]
Cervical Problems	40	5.8[a]
Uterine Infections	22	3.2[a]
Benign Tumors Uterus	15	2.2[a]
Unknown Reasons	45	6.6[a]
Weakened Immune System	21	3.1[a]
Male Factor	104	15.2[b]
More Than One Reason	214	31.2[c]
Total	686	100

Within rows, prevalence rates with different small alphabetical superscripts are significantly different at least at *P*<0.05.

Table5: Showed Causes of poor fertilization regarding to prevalence rate of infertility.

Causes of poor fertilization	Frequency	Prevalence rate
damaged ovum	39	5.7[a]
Abortion	83	12.1[b]
Ectopic pregnancy	11	1.6[a]
Poly cystic ovary syndrome	72	10.5[b]
endometrial weakness	9	1.3[a]
uterine infection	13	1.9
uterine tumor	39	5.7[a]
congenital anomaly	24	3.5[a]
Overweight	40	5.8[a]
Excess hormone than normal	32	4.7[a]
Reservation for the answer	324	47.2[c]
Total	686	100

Within rows, prevalence rates with different small alphabetical superscripts are significantly different at least at *P*<0.05.