

Effectiveness of an Educational Program Concerning Premarital Screening of Fertility Tests on Student's Knowledge at University of Baghdad

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ABSTRACT

Background: Premarital screening is one of the most effective ways to prevent or minimize social, emotional and financial burden on the family and society, and due to low level of knowledge about this screening among people and including university students who are the optimal sample as they come to get married. Therefore, applying educational program concerning premarital screening was successful in many parts of the world.

الخلاصة:

خلفية البحث: تعد فحوصات ما قبل الزواج أحد أكثر الطرائق فاعلية لمنع أو تقليل العبء الاجتماعي والعاطفي والمالي على الأسرة والمجتمع، ونتيجة لانخفاض مستوى المعرفة حول هذه الفحوصات بين الناس بما في ذلك طلاب الجامعة، الذين هم العينة المثلى كونهم مقبلين على الزواج، وبالتالي فإن تطبيق البرنامج التعليمي المتعلق بفحوصات ما قبل الزواج كان ناجحاً في أجزاء كثيرة من العالم.

الهدف: تحديد فاعلية البرنامج التعليمي المتعلق بفحوصات الخصوبة قبل الزواج على معارف الطلبة في جامعة بغداد وإيجاد العلاقة بين معارف الطلبة وبعض متغيرات الدراسة.

المنهجية: أجريت دراسة شبه تجريبية (بأسلوب استخدام اختبار قبلي بعدي) في ست كليات في جامعة بغداد وهي: كلية العلوم السياسية، كلية ابن رشد، كلية القانون، كلية الآداب، كلية الإعلام وكلية اللغات. أجريت هذه الدراسة من 1 نيسان / 2017 إلى 5 أيار / 2018. تم اخذ عينة عشوائية متعددة الطبقات من (40) طالب لكل من المجموعة الضابطة و مجموعة الدراسة في كليات جامعة بغداد. تم استخدام استمارة استبيان كأداة لجمع البيانات. تم تنفيذ الاستبيان و صحة المحتوى من خلال سبعة خبراء. تم استخدام التحليلات الاحصائية الوصفية والاستنتاجية لتحليل البيانات.

النتائج: بينت نتائج الدراسة أن أعلى نسبة لأعمار الطلبة كانت (21-22) سنة وتشكل (75%) من إجمالي العينة. و أن معظم الطلبة هم من الإناث ويشكلون نسبة (75%)، (62.5%) لكل من المجموعتين الضابطة والدراسة على التوالي. بشكل عام، تظهر النتائج تحسناً ذا دلالة إحصائية في معارف طلبة جامعة بغداد فيما يتعلق بالبرنامج التعليمي المتعلق بفحوصات الخصوبة قبل الزواج.

الاستنتاجات: ان البرنامج التعليمي فعالاً وزاد من معارف طلبة الجامعة بفحوصات الخصوبة قبل الزواج.

التوصيات: إجراء برامج تعليمية صحية متكررة حول فحوصات ما قبل الزواج بين طلبة المدارس الثانوية والجامعات لتحسين معرفتهم باختبارات الخصوبة.

الكلمات المفتاحية: فاعلية، معارف، فحوصات الخصوبة، طلبة الجامعة.

Objective: Identify the effectiveness of educational program concerning premarital screening of fertility tests on student's knowledge at Baghdad University and find out the relationship between students' knowledge and certain studied variables.

Methodology: A quasi-experimental design (test - retest approach) was conducted at six colleges and its, college of political science, college of education Abn rushd, college of law, college of literature, college of media and college of language. This study was conducted during the period of 1\ April \ 2017 to 5 \ May \ 2018. Multistage stratified random sample of

(40) students for both group control and study group at Baghdad University colleges. A questionnaire, instructional booklet, guide booklet was used as a tool of data collection to fulfill with objective of the study and it is consisted of three parts. The questionnaire and content validity was carried out through the eight experts. Descriptive and inferential statistical analyses were used to analyze the data.

Results: The findings of the study showed that the highest percentage of the students' age is (21-22) years which constitutes to (75 %) of the total sample. The results reveal that most of the students are females and constitute to (75%), (62.5%) for both study and control group respectively. In general the

results show a statistical significant improvement of university student's knowledge concerning educational program concerning premarital screening of fertility tests.

Conclusion: The educational program was effective and increases the knowledge of the students about premarital screening of fertility tests.

Recommendation: Conducting frequent health educational programs about premarital screening among students in high schools and universities to improve their knowledge toward fertility tests.

Keyword: Effectiveness, Knowledge, fertility tests, University Students.

INTRODUCTION

"Marriage is considered an important event in the individuals' lives, as they work on beginning a family, and through which the individual guides a new stage in terms of building the emotional, social, familial, and healthy relationships" (1). Pre-marital screening it is a set of laboratory and clinical tests that are proposed to work for any two partners before marriage, to give couples (who are planning to get married soon) medical consultation for any abnormalities detected (2).

Fertility test is carried out to find fertility problem for couple is depended on physical examination and medical history (3), and include: Seminal Fluid Test for male, Pelvic ultrasound for women and sex hormone test (4, 5, and 6).

So the fertility tests before marriage are important in detect any problem find for both male and female in order to manage them as soon as possible before marriage done. The university students are the most important sample to assess their knowledge about fertility tests and what's the

important of it to do it. So our study aimed to assess and enhance university students toward fertility tests before marriage, because of the infertility is the most medical problem that faces couple after marriage in the world.

AIMS OF THE STUDY

Identify the effectiveness of educational program concerning premarital screening of fertility tests on student's knowledge at Baghdad University and find out the relationship between students' knowledge and certain studied variables(e.g. age, gender, type of college, residency).

METHODOLOGY

- **Study Design:** A quasi-experimental design (test - retest approach) was conducted during the period of 1st April 2017 to 5th May 2018.
- **Study Setting:** This study conducted at six colleges and its college of education Abn rushd, college of political science, college of law, college of literature, college of media and college of language in university of Baghdad in Iraq.

RESULTS

Table (1): Distribution of the Studied Groups According to Socio-Demographical Characteristics Variables with Comparisons Significant

Socio-Demographical Characteristics variables	Classes	Study (N=40)		Control (N=40)		C.S. (*) P-value
		No.	%	No.	%	
Age group	21 - 22	30	<u>75</u>	30	<u>75</u>	C.C.=0.139 P=0.663 (NS)
	23 - 24	7	17.5	9	22.5	
	25 - 26	2	5	1	2.5	
	27 - 28	1	2.5	0	0	
Gender	Male	12	30	15	37.5	C.C.=0.079 P=0.478 (NS)
	Female	28	<u>70</u>	25	<u>62.5</u>	
Father's education	Don't read, don't write	1	2.5	2	5	C.C.=0.326 P=0.091 (NS)
	Read and write	6	15	1	2.5	
	Primary	5	12.5	1	2.5	
	Intermediate	6	15	6	15	
	Secondary	5	12.5	12	30	
	Institute and over	17	<u>42.5</u>	18	<u>45</u>	
Mother's education	Don't read, don't write	2	5	0	0	C.C.=0.219 P=0.544 (NS)
	Read and write	5	12.5	4	10	
	Primary	7	17.5	6	15	
	Intermediate	10	<u>25</u>	7	17.5	
	Secondary	7	17.5	11	27.5	
	Institute and over	9	22.5	12	<u>30</u>	
Father's occupation	Don't work	1	2.5	5	12.5	C.C.=0.252 P=0.144 (NS)
	Employee	17	<u>42.5</u>	10	25	
	Retired	7	17.5	11	27.5	
	Free work	15	37.5	14	<u>35</u>	
Mother's occupation	House wife	34	<u>85</u>	30	<u>75</u>	C.C.=0.125 P=0.528 (NS)
	Employee	5	12.5	8	20	
	Free work	1	2.5	2	5	
Original residency	Urban	30	<u>75</u>	29	<u>72.5</u>	C.C.=0.191 P=0.555 (NS)
	Rural	1	2.5	2	5	
	Village	2	5	2	5	
	District	7	17.5	7	17.5	
Current residency	With family	36	<u>90</u>	31	<u>77.5</u>	C.C.=0.181 P=0.439 (NS)
	With relative	1	2.5	4	10	
	Internal section	2	5	3	7.5	
	Alone	1	2.5	2	5	

(*) NS: Non Sig. at $P > 0.05$; Testing based on a contingency coefficient (C.C.) test.

This table shows that the highest percentage (75%) in study and control group in age group (21-22) years, regarding to gender (70%) (62.5%) were 'female' respectively in study and control sample, regarding to father's education (42.5%) (54%) were 'Institute and over' respectively in study and control sample, regarding mother's education (25%) in study sample were 'intermediate' while (30%) were 'Institute and over' in control sample, regarding to father's occupation (42.4%) were 'Employee' in study sample while (35%) were 'free work', regarding

to mother's occupation (85%) (75%) were 'house wife', respectively in study and control sample. regarding to original residency (75%) (72.5%) were live in 'urban' respectively in study and control sample, regarding current residency (90%) (77.5%) were' live with family'.

Table (2): Distribution of the studied groups according to (SDCv.) with comparisons significant

The Source of Information about Premarital Screening	Classes	Study		Control		C.S. (*) P-value
		No.	%	No.	%	
Friend and relative	Yes	17	42.5	23	57.5	C.C.=0.148 P=0.180 (NS)
	No	23	57.5	17	42.5	
Television, and Radio	Yes	3	7.5	8	20	C.C.=0.179 P=0.105 (NS)
	No	37	92.5	32	80	
Magazine and Newspaper	Yes	4	10	3	7.5	C.C.=0.044 P=0.692 (NS)
	No	36	90	37	92.5	
Internet	Yes	17	42.5	16	40	C.C.=0.025 P=0.820 (NS)
	No	23	57.5	24	60	
School	Yes	1	2.5	2	5	C.C.=0.066 P=0.556 (NS)
	No	39	97.5	38	95	
Doctor	Yes	8	20	9	22.5	C.C.=0.031 P=0.785 (NS)
	No	32	80	31	77.5	
Nurse or midwife	Yes	3	7.5	1	2.5	C.C.=0.114 P=0.305 (NS)
	No	37	92.5	39	97.5	

(*)NS: Non Sig. at $P > 0.05$; Testing based on a contingency coefficient (C.C.) test.

Table 2 shows that 42.5% and 57.5% of studied sample in the study and control groups respectively reported they obtained information regarding premarital screening from friend and relative. Meanwhile, 1% of the study group and 5% of control group obtained information from school. And results shows that studied groups recorded no significant differences at $P > 0.05$.

Table (3): Distributions of students according their Knowledge of Fertility tests for Men and Women (Pre, and Post) implementation of the educational Program

	Knowledge Of Component of Premarital Screening (Fertility tests for Men and Women) Items (#)	Period	No	Study				Control				C.S.
				MS	SD	RS%	Ass.	MS	SD	RS%	Ass.	
1.	Fertility tests for Men											
1.1	The aims of semen examination for men is:											
1.1.1	Detecting problems in the male reproductive system that cause infertility	Pre	40	0.70	0.46	70	H	0.85	0.36	85	H	NS
		Post	40	0.90	0.30	90	H	0.85	0.36	85	H	HS
1.1.2	Provides information on sperm production	Pre	40	0.42	0.50	42	M	0.68	0.47	68	H	NS
		Post	40	0.77	0.42	77	H	0.68	0.47	68	H	HS
1.1.3	Gives an idea of the proportion of male hormones	Pre	40	0.32	0.47	32	L	0.30	0.46	30	L	NS
		Post	40	0.33	0.47	33	L	0.30	0.46	30	L	HS
1.2	The aims of examination fertility hormone levels for men are:											

1.2.1	Diagnosis of infertility	Pre	40	0.60	0.50	60	M	0.73	0.45	73	H	NS
		Post	40	0.83	0.38	83	H	0.73	0.45	73	H	HS
1.2.2	To diagnose the amount of sperm	Pre	40	0.43	0.50	43	M	0.40	0.50	40	M	NS
		Post	40	0.43	0.50	43	M	0.40	0.50	40	M	HS
2.	Fertility tests for women											
2.1	The aims of the examination of fertility hormone levels for women are:											
2.1.1	To diagnosis of infertility	Pre	40	0.62	0.49	62	M	0.85	0.36	85	H	NS
		Post	40	0.90	0.30	90	H	0.85	0.36	85	H	HS
2.1.2	To diagnose delayed reproduction	Pre	40	0.63	0.49	63	M	0.75	0.44	75	H	NS
		Post	40	0.70	0.46	70	H	0.75	0.44	75	H	HS
2.1.3	To diagnose the size of the ovaries	Pre	40	0.30	0.46	30	L	0.20	0.41	20	L	NS
		Post	40	0.37	0.49	37	M	0.20	0.41	20	L	HS
2.2	Ultrasound Imaging gives an Image of:											
2.2.1	Ovaries	Pre	40	0.48	0.51	48	M	0.72	0.45	72	H	NS
		Post	40	0.90	0.30	90	H	0.72	0.45	72	H	HS
2.2.2	Fallopian tube	Pre	40	0.30	0.46	30	L	0.65	0.48	65	M	NS
		post	40	0.65	0.48	65	M	0.65	0.48	65	M	HS
2.2.3	Uterus	Pre	40	0.43	0.50	43	M	0.65	0.48	65	M	NS
		post	40	0.83	0.38	83	H	0.65	0.48	65	M	HS

HS: Highly Sig. at $P < 0.01$; S: Sig. at $P < 0.05$; NS: Non Sig. at $P > 0.05$; Testing based on a contingency coefficient (C.C.) test. (#) multiple choice answers .Assessments Intervals Scoring Scales: [L: Low (0.00 – 33.33)]; [M: Moderate (33.34 – 66.66)]; [H: High (66.67 – 100)].

Table (3) shows a summary statistics of knowledge related to premarital screening questionnaire's items concerning (component of premarital screening/fertility tests for men and women) along studied (Pre, and Post) periods due to applying educational program of knowledge part toward studied students in the studied groups with comparisons significant. Results of testing significant with reference of studied items concerning effectiveness of applying educational program were reported highly significant differences at $P < 0.01$ toward impact of program through raising knowledge grades of studied respondents. In addition to that, and rather than testing significant are too sensitive to improvements that occurred for repeated measurements statistic, but the most of study group's items illustrated good improvements due to meaningful changes of assessments levels along pre-post periods of time.

Table (4): distribution of Knowledge related to Premarital Screening/ Fertility tests for Men and Women Questionnaire's sub main domains in (Pre, and Post) Periods of applying proposed educational program in the studied groups with Comparisons Significant

No.	Knowledge of premarital Screening / Fertility tests for Men and Women	Periods	No.	Study			Control		
				PGMS	t-test	P-value	PGMS	t-test	P-value
1.	Examination of semen for men	Pre	40	48.33	-3.058	0.004 HS	60.83	0.000	1.000 NS
		Post	40	65.83			60.83		
2.	The aims of the examination of fertility hormone levels for men are	Pre	40	51.25	-1.854	0.071 NS	56.25	0.000	1.000 NS
		Post	40	62.50			56.25		
	Tests for men	Pre	40	49.79	-3.333	0.002 HS	58.54	0.000	1.000 NS
		Post	40	64.17			58.54		
3.	The aims of the examination of fertility hormone levels for women are	Pre	40	51.67	-2.333	0.025 S	60.00	0.000	1.000 NS
		Post	40	65.83			60.00		
4.	Ultrasound imaging gives an image of	Pre	40	40.00	-5.478	0.000 HS	67.50	0.000	1.000 NS
		Post	40	79.17			67.50		
	Tests for women	Pre	40	45.83	-4.853	0.000 HS	63.75	0.000	1.000 NS
		Post	40	72.50			63.75		
	Total Fertility Tests for Men and Women	Pre	40	47.81	-4.731	0.000 HS	61.15	0.000	1.000 NS
		Post	40	68.33			61.15		

(*) HS: Highly Sig. at $P < 0.01$; S: Sig. at $P < 0.05$; NS: Non Sig. at $P > 0.05$; Testing based on Matched Paired t-test.; PGMS: percentile grand mean score; Assessments Intervals Scoring Scales: [L: Low (0.00 – 33.33)]; [M: Moderate (33.34 – 66.66)]; [H: High (66.67 – 100)].

Table (4) shows that along pre-post periods in the light of studied domains related to premarital screening/fertility tests for men and women there was highly significant differences at $p < 0.01$ are accounted in the study group, while studied domains having no significant differences along pre-post periods concerning controlled group at $P > 0.05$.

DISCUSSION

Table (1) shows distribution of study sample in socio- demographic characteristics.

This table indicate that high percentage of the students' age is (21-22) years which constitutes to (75 %) of the total sample. This finding can be interpreted in a way that the vast majority of students in fourth class of college have age of (21) years. The results reveal that most of the students are females and constitute to (75%), (62.5%) for both study and control group respectively (Table 1). This finding provides evidence that the number of females is more than males in our nation this result approved with study that conducted by McClain, 2013 that reported that most study sample were female (60.2%)(6) and with study that conducted by Farouk and Mahmoud, 2018 that most of study sample were female (54.5%)(7) and that may related to Females are more interested in knowing details about fertility tests. Concerning father's education, the highest percentage (42.5%), (45.%) for both study and control group respectively are institute and over graduates. Concerning mother's education, the highest percentage (25.%), (27.5%) for both study and control group respectively are intermediate and secondary respectively, due to this finding of study and half of study sample their knowledge about PMS were from friend and relative and level of education of their father and mother play important role in increase their knowledge about PMS. Concerning father's occupation, the highest percentage (42.5%) for study group were employee and (35%) control group were free work, while mother's occupation, the highest percentage (85%), (75%) for both study and

control group respectively were housewife (Table 1) this reveal that father play important role in increase student knowledge about PMS. The results also show (75%), (72.5%) for both study and control group respectively they live in urban (Table 1) and this finding agreed with study that conducted by Farouk and Mahmoud, (2018), that (82.3%) live in urban (7). The results also show (90%), (77.5%) for both study and control group respectively they live with their family (Table 1), place of student living is help in provide new knowledge sources about PMS so how live in urban their knowledge is differ from how live in rural in gain advance knowledge about PMS.

Table (2) shows distribution of study sample regarding source of knowledge about premarital screening for both study and control group:

There are different sources of knowledge mentioned by the subjects such as friends, relatives, television, radio, magazine, newspaper and internet etc. the (42.5%) and (57.5%) of studied sample in the study and control groups respectively reported they obtained knowledge regarding premarital screening from friend and relative, meanwhile, 1% of the study group and 5% of control group obtained knowledge from school as shows in table (2). And that similarity to study conducted by Moussa and colleagues, (2018) (8) reported that (67.5 %) of studied sample reported they obtained knowledge regarding premarital counseling from friend and relative, meanwhile, (7.5%) of study sample obtained knowledge from newspaper. In other study conducted by Hejri and colleagues, (2015) (9) reported that the highest percentages (61.7%), (47%) and (45.2%) of

study sample have their source of knowledge about PMS in multiple answer choices from (families), (internet) and (friends) respectively. And in study that conducted by Ali and colleagues, (2018) ⁽¹⁰⁾ reported their source of knowledge about PMS and genetic counseling in multiple answer choices from (studying at the faculty) (63.3%), (mass media) (58.1%) and (family and friends and health care provider) (56%). In other study conducted by Al Kindi and colleagues, (2012) ⁽¹¹⁾ reported that the main sources of knowledge about PMS were school/college (36%), media (35%), family and friends (33%) and health services (31%). In current study there is no significant differences between student's knowledge and attitude and sources of knowledge at $P>0.05$ as shown in table (2), and that is reflecting validity of the selected subjects due to their similarity status in light of that variables, as well as preceding results indicating that two studied groups are thrown from the same population in light of that variables, and that are more reliable for this study, since any meaningful deviation between the studied groups should be interpreted due to effectiveness of applying the educational program of premarital screening.

Table (3) distribution the Effectiveness of Educational Concerning the Premarital Screening of Fertility Tests for Men and Women on University Student Knowledge for (Study and Control group) at Pre and Posttest period, so the educational program was effective on study group in current study through the improvement of assessment level of the university

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students responses for knowledge concerning the premarital screening of fertility tests between pre and post.

In table (4) Results of testing significant with reference of studied items concerning effectiveness of applying educational program were reported highly significant differences at $P<0.01$ toward impact of program through raising knowledge grades of studied respondents. In addition to that, and rather than testing significant are too sensitive to improvements that occurred for repeated measurements statistic, but the most of study group's items illustrated good improvements due to meaningful changes of assessments levels along pre-post periods of time.

CONCLUSION

The educational program was effective and increases the knowledge of the students about premarital screening tests.

RECOMMENDATIONS

The researcher recommend to conducting frequent health educational programs about premarital screening among students in high schools and universities to improve their knowledge toward fertility tests.

Ethical Clearance: All experimental protocols were approved under the Maternal and Newborn Nursing Unit, College of Nursing, University of Baghdad, Iraq and all experiments were carried out in accordance with approved guidelines.

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