

WOMEN'S SEXUAL HEALTH

The Relationship of Close Marital Affairs to Healthy Women's Sexual Function: A Cross-Sectional Retrospective Study in Egypt



Ahmed Mohamed Hassanin, MD, PhD,¹ Amr Nabhan Kaddah, MD, PhD,¹ and Mohamed Yousry El-Amir, MD, PhD¹

ABSTRACT

Introduction: Some marriage-related factors may be associated with women's sexuality, but this topic has not been sufficiently investigated in developing countries. Indeed, these marital factors can be well planned and/or managed to achieve desirable outcomes; for instance, the legal age of marriage can be increased to 21 years. However, how this will reflect on women's sexuality should be clarified before any laws are changed.

Aim: The purpose of this study was to investigate the associations of the age of marriage, number of children, educational level, duration of marriage, and aging with female sexual function among groups of Egyptian women.

Methods: We analyzed the recorded sociodemographic data and scores of the 19-item Female Sexual Function Index (FSFI) among 270 apparently healthy women aged 21–45 years. According to the studied variables, the data were divided into various subgroups.

Main Outcome Measure: The sociodemographic data and scores of the FSFI.

Results: Marriage, before or after 21 years, was not correlated with sexual function. FSFI scores were significantly lower among women with ≥ 3 children and women who had been married for ≥ 10 years. FSFI scores were significantly lowest in women with the lowest educational level and those aged ≥ 40 years.

Conclusion: It is important to ensure that people are equipped with accurate information. Sound knowledge can serve as the basis for informed decisions regarding the age of marriage and number of children desired. Furthermore, everyone, not just women, should be aware of the adverse sexual effects associated with long marriages and the age-related declines in sexual activity. Accordingly, women can achieve better sexual satisfaction. **Hassanin AM, Kaddah AN, El-Amir MY. The Relationship of Close Marital Affairs to Healthy Women's Sexual Function: A Cross-Sectional Retrospective Study in Egypt. Sex Med 2019;7:498–504.**

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Key Words: Demographic Variable; Female Sexual Function; Healthy Woman; Marital Factors; Sexual Function

INTRODUCTION

Health is defined as a state of complete physical, mental, and social well-being. Contemporary research highlights the positive effects of sexual satisfaction and marital stability on health outcomes and well-being.^{1–3} However, a couple in a committed relationship may encounter a variety of issues related to marriage, which can adversely impact their sexual satisfaction and quality of life.^{4,5}

For instance, there is a high degree of importance attached to the way women look, and when pregnancy, labor, and childcare alter their physical appearance, perceived changes in weight, body image, and genital self-image can affect women's sexuality and quality of life.^{4,6}

The marital relationship is largely guided by cultural customs, norms, and expectations.⁷ In many developing countries, people are inclined to have a large number of children because of religious beliefs, as insurance against the high child mortality rates, and for continuation of the family name.^{8–10} Additionally, the influence of neighbors' preferences and the role of children in contributing to the household economy and support of parents in old age can drive people to have large families.^{8–10} Young age at first marriage/union and low educational levels were found to be the main risk factors for women in northwestern Ethiopia and Nepal having many children.^{11,12}

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¹Department of Andrology and Sexology at Faculty of Medicine, Cairo University, Cairo, Egypt

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In rural areas in Egypt as well, people with low educational levels prefer large families.¹³ For this reason, a couple engages in a committed relationship at a young age (customary marriage), which always ends with formal marriage when the couple is legally eligible. In addition to involving traumatic childhood/adolescent sexual experiences,¹⁴ marriage at a young age can accentuate the physical changes that accompany bearing and caring for many children. Moreover, the tradition of large families has resulted in overpopulation in Egypt; the country's population growth has mainly been influenced by changes in fertility behavior.¹³

In developing countries, overpopulation threatens not only resources but also the commitment to achieving sustainable development.¹⁵ Indeed, legal changes to increase the age of marriage of women can play a role in reducing the high fertility rates in developing countries; members of the Egyptian parliament recommend increasing the legal age of marriage for women to 21 years from the current 18 years.

It seems that some marriage-related factors can be well planned for, such as the age of marriage, number of children desired, and the woman's educational level. Moreover, the adverse sexual effects associated with long marriages and aging^{16–18} can be ameliorated by sex education and therapy.^{17,19,20}

To the best of our knowledge, the association of the age of marriage with women's sexuality has not been investigated before. Additionally, the correlations of other marriage-related issues with female sexual function (FSF) have not been sufficiently investigated in developing countries. This highlights the importance of studying the correlations of these issues with women's sexuality to ensure that all concerned parties are equipped with the necessary information. This can assist them in properly planning for marital life. Accordingly, advancements can be made at the levels of individual health, family unity, and societal development.

This cross-sectional retrospective study aims to investigate the associations of the age of marriage, number of children, educational level, marriage duration, and aging with sexual function among groups of apparently healthy women in Egypt.

METHODS

This cross-sectional retrospective study was designed to investigate several marriage-related variables associated with FSF. We analyzed the data of apparently healthy women included in control groups in 3 previous studies investigating FSF. The 3 studies' protocols required all potentially eligible participants to provide histories (personal, medical, surgical, and sexual) and to undergo examinations (general and genital). Furthermore, each participant was invited for a structured personal interview where she was asked to answer an Arabic version of the 19-item Female Sexual Function Index (FSFI).²¹ Interviews were conducted in private by trained female interviewers.

In these studies, confounders were reduced by applying the inclusion and exclusion criteria (including the extremes of age). The inclusion criterion was married Egyptian women aged 21–45 years with an established sexual relationship for at least 6 months. The exclusion criteria were as follows: pregnant, divorced, or widowed women; women with medical conditions, such as hypertension, diabetes, and thyroid problems; women with psychiatric disorders; women with genital diseases or infections; and/or women who had or preferred women as sexual partners. In the present study, we were concerned with socio-demographic data and FSFI scores.

The studies' protocols were approved by the Ethics Committee of the Faculty of Medicine, Cairo University. Participants were recruited from 5 centers in 3 governorates (Cairo, Giza, and Beni Suef) in Egypt from 2016–2018. Informed consent was obtained from all participants who were aware that all their data would be used for research purposes.

In the current study, a co-author collected and reviewed the data. We excluded women who reported an age of marriage under 15 years, and the recorded sociodemographic data and FSFI scores of 72, 98, and 100 participants were subject to statistical analysis.

According to the 5 investigated variables, participants were divided into various subgroups: age of marriage (<21 or ≥21 years); number of children (<3 or ≥3); educational level (low [none/<9 years], moderate [secondary school graduate], or high [university graduate]); length of marriage (<10 or ≥10 years); and age (21 to <30, 30 to <40, or ≥40 years). Age and duration of marriage were recorded in 2 studies only, whereas the other variables and FSFI scores were recorded in all 3. Sexual dysfunction (impaired sexual function) was identified by an FSFI total score <26.55.²²

Data Analysis

Data were reviewed and IBM SPSS software package version 20.0 (IBM, Armonk, NY, USA) was used for the analysis. Categorical data were described as numbers and percentages. The Kolmogorov–Smirnov test was used to verify the normality of the distribution. Quantitative data were described as ranges, means ± SDs, or medians and interquartile ranges (IQRs).

For comparative studies, the chi-square test was used to analyze the categorical variables and the Mann–Whitney and Kruskal–Wallis tests were used to analyze the numerical data. Each educational level (categorical variable) was assigned a score to allow for correlation. Spearman's coefficient was calculated for correlated variables. Statistical significance was set at $P < .05$.

RESULTS

This study analyzed the data of 270 women. The mean age of the participants was 33.2 ± 6.9 years. According to their age, the participants were divided into subgroups as follows: 21 to <30

Table 1. Descriptive statistics of the studied numerical variables: age, age of marriage, number of children, duration of marriage, and FSFI scores in healthy women

	Range	Mean \pm SD	Median (IQR)
Age, years	21–45	33.2 \pm 6.9	33 (28–39)
Age of marriage	15–32	22.5 \pm 3.4	23 (20–25)
Number of children	0–6	2.2 \pm 1.4	2 (1–3)
Duration of marriage	1–26	12.3 \pm 6.6	12 (7–17.25)
Desire	1.2–6	4 \pm 1.1	4.2 (3.6–4.8)
Arousal	0–6	4.1 \pm 1.2	4.5 (3.6–5.1)
Lubrication	0–6	4.7 \pm 1.1	4.8 (4.2–5.4)
Orgasm	0–6	4.4 \pm 1.3	4.8 (3.6–5.6)
Satisfaction	1.2–6	4.7 \pm 1.3	4.8 (4–6)
Pain	0–6	4.7 \pm 1.2	4.8 (4–5.6)
Total FSFI score	4.1–36	26.6 \pm 6	27.9 (22.8–31.1)

FSFI = Female Sexual Function Index; IQR = interquartile range (range from 25th–75th percentiles).

years (97 participants = 35.9%), 30 to <40 years, (108 participants = 40%), and \geq 40 years (65 participants = 24.1%).

10 potentially eligible participants were excluded from the study because they reported an age of marriage below 15 (2 in urban areas and 8 in rural areas in Beni Suef). The age of marriage of included participants ranged from 15–32 years with a mean of 22.5 \pm 3.4 years. According to the age of marriage, the participants were divided into subgroups as follows: <21 years (56 participants = 32.9%) and \geq 21 years (114 participants = 67.1%). 9 of the included participants reported an age of marriage of 15 to <18 years (1 in an urban area and 8 in rural areas in Beni Suef).

The number of children ranged from 0–6, with a mean of 2.2 \pm 1.2 and a median of 2 (IQR: 1–3); 159 participants (58.9%) had <3 children, whereas 111 (41.1%) had \geq 3 children.

Regarding education, the study included 114 participants (42.2%) with low educational levels, 100 participants (37%) with secondary school graduates, and 56 participants (20.7%) with university graduates.

The duration of marriage ranged from 1–26 years with a mean of 12.3 \pm 6.6 years and a median of 12 years (IQR: 7–17.25); 65 (38.2%) and 105 (61.8%) of the participants had been married for <10 and \geq 10 years, respectively. The descriptive statistics of the numerical data and the FSFI scores of the 270 participants are presented in Table 1.

According to the age of marriage, comparisons between the subgroups yielded insignificant differences in all the sex domain scores and the FSFI total score (all P values > .05; Table 2, Figure 1). Furthermore, impaired FSF (FSFI total score <26.55)²² was identified in 27 participants (48.2%) whose age of marriage <21 and 54 participants (47.4%) in the other subgroup; the difference was statistically insignificant ($P = .92$).

Scores in all the FSFI domains and total scores were significantly lower in women who had \geq 3 children compared with the

other subgroup (P value in the pain domain: .026 and all the other P values < .001; Table 2, Figure 2). Furthermore, impaired sexual function was identified in 64 participants (57.7%) with \geq 3 children and 44 participants (27.7%) in the other subgroup; the difference was statistically significant ($P < .001$).

The desire, arousal, orgasm, and FSFI total scores were significantly lowest among women with low educational levels compared with the other subgroups (P values = .048, .003, < .001, and .007, respectively; Table 3). Furthermore, impaired sexual function was identified in 56 (49.1%), 36 (36%), and 16 participants (28.6%) in the subgroups with low, moderate, and high educational levels, respectively, with significant differences ($P = .022$).

Participants who had been married for \geq 10 years had significantly lower FSFI scores compared with the other subgroup ($P = .003$ in the arousal and pain domains, $P = .004$ in the satisfaction domain, and $P < .001$ in all the other domains; Table 3). Furthermore, impaired sexual function was identified in 62 (59%) and 19 participants (29.2%) who had been married for \geq 10 and <10 years, respectively; the difference was statistically significant ($P < .001$).

The FSFI domain scores and the total score were significantly lowest in the subgroup aged \geq 40 years (all P values < .001; Table 4). Impaired sexual function was identified in 18 (18.6%), 43 (39.8%), and 47 participants (72.3%) in the subgroups aged 21 to <30, 30 to <40, and \geq 40 years, respectively, with significant differences ($P < .001$).

Correlations between the age of marriage and FSFI scores yielded insignificant differences (all P values > .05). The number of children, duration of marriage, and age were significantly negatively correlated with all the FSFI domains and total scores (P values: number of children was correlated with the pain domain score, $P = .014$; duration of marriage was correlated with the satisfaction domain score, $P = .003$; and for all the other correlated variables, the P values were < .001). Educational level was significantly positively correlated with the arousal, lubrication, orgasm, and satisfaction domain scores and FSFI total score ($P = .013, .029, < .001, .031, \text{ and } .003$, respectively; Table 5).

DISCUSSION

The results of the current study indicate that postponing marriage, up to the age of 21, is not associated with women's sexuality in later life. However, having a large number of children, low educational levels, long-term relationships, and aging are associated with diminished FSF.

Marriage/union at a young age is a traumatic sexual experience, which has been shown to adversely impact physical, psychological, and sexual health in adulthood.¹⁴ Accordingly, we decided to investigate how postponing marriage is correlated with FSF. Our results indicated insignificant differences in FSFI

Table 2. Association of the age of marriage (years) and number of children with FSFI scores (mean ± SD) in healthy women

	Age of marriage Number		P value	Number of children Number		P value
	<21 y 56 (32.9%) (mean ± SD)	≥21 y 114 (67.1%) (mean ± SD)		<3 children 159 (58.9%) (mean ± SD)	≥3 children 111 (41.1%) (mean ± SD)	
Desire	3.9 ± 1.2	4.2 ± 1.1	.27 [†]	4.2 ± 1	3.7 ± 1.2	< .001 ^{*,†}
Arousal	4.1 ± 1.3	4.2 ± 1.2	.58 [†]	4.3 ± 1.1	3.9 ± 1.3	.001 ^{*,†}
Lubrication	4.4 ± 1.1	4.5 ± 1.2	.51 [†]	5 ± 1	4.3 ± 1.1	< .001 ^{*,†}
Orgasm	4.4 ± 1.4	4.3 ± 1.4	.49 [†]	4.7 ± 1.2	4.1 ± 1.4	< .001 ^{*,†}
Satisfaction	4.6 ± 1.3	4.5 ± 1.2	.69 [†]	4.9 ± 1.2	4.4 ± 1.3	.001 ^{*,†}
Pain	4.5 ± 1.2	4.4 ± 1.3	.82 [†]	4.8 ± 1.1	4.5 ± 1.3	.026 ^{*,†}
Total score	25.9 ± 6.5	26 ± 6.3	.85 [†]	27.8 ± 5.6	24.9 ± 6.3	< .001 ^{*,†}

FSFI = Female Sexual Function Index.

*P < .05.

[†]Mann–Whitney test.

scores between women who reported the age of marriage under and over 21 years. In addition, the age of marriage was not correlated with FSFI scores. It seems that delayed marriage has no detrimental associations with FSF; providing people with this information can help prevent the adverse effects of marriage at a young age.

This study investigated how the number of children a woman has borne is associated with the woman’s sexual life because some culture-dependent factors can influence the association of marital satisfaction with the number of children.⁷ We found that women with <3 children had better sexual experiences; the number of children was significantly negatively correlated with FSFI scores. These findings can be explained on the basis of the results of previous studies; childbirth has been demonstrated as having a lasting negative effect on FSF, regardless of the mode of delivery. This negative effect is related to psychological factors, rather than physical ones.^{23,24} In addition, the expenditure and effort invested in bearing and raising children can yield new daily pressures, which can be reflected in the overall relationship.² Equipping people with accurate information regarding how to

improve marital life is essential to the maintenance of a healthy sexual life.

In this study, we found that the higher the educational level, the better the sexual experiences, which has been confirmed in several previous studies.^{25,26} It seems that education can facilitate obtaining sound sexual information, which is necessary for healthy sexuality. Furthermore, educated people/women tend to postpone marriage until they become sufficiently mature, and they generally accept a 2-child norm; education can have a positive impact on people, which is reflected in their lives.

The desired family size reported by young people aged 15–24 in rural villages of Minya, Egypt, revealed significant household and neighborhood normative influences.²⁷ In this study, 16 of 19 women who reported an age of marriage under 18 years belonged to rural areas, which have been known to have the lowest educational levels in Egypt.¹³ Furthermore, the age-specific fertility rate among Egyptian women aged 15–19 years is 75 per 1,000 in rural areas, more than 3 times the rate among those in urban areas.¹³ These findings indicate that the role of education should be considered not only in reducing the

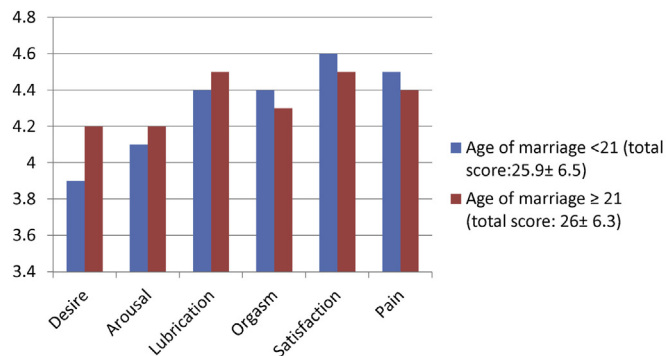


Figure 1. Comparison of Female Sexual Function Index sex domain scores with regard to the age of marriage (all the scores had insignificant differences).

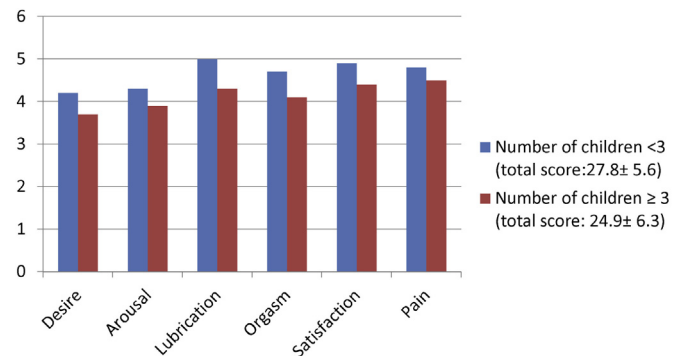


Figure 2. Comparison of Female Sexual Function Index sex domain scores with regard to the number of children (scores in all domains were significantly lower in women with ≥3 children).

Table 3. Association of educational level and marriage duration (years) with FSFI scores (mean \pm SD) in healthy women

	Educational level			<i>P</i> value	Duration of marriage		<i>P</i> value
	Number				Number		
	None/low 114 (42.2%) mean \pm SD	Moderate 100 (37%) mean \pm SD	High 56 (20.7%) mean \pm SD		<10 65 (38.2%) mean \pm SD	\geq 10 105 (61.8%) mean \pm SD	
Desire	3.9 \pm 1.1	4.2 \pm 1.1	4.1 \pm 1.1	.048 ^{*,†}	4.5 \pm 1	3.8 \pm 1.1	< .001 ^{*,‡}
Arousal	3.9 \pm 1.2	4.4 \pm 1.2	4.2 \pm 1.3	.003 ^{*,†}	4.5 \pm 1.3	4 \pm 1.1	.003 ^{*,‡}
Lubrication	4.6 \pm 1	4.7 \pm 1.1	4.8 \pm 1.3	.109 [†]	4.7 \pm 1.2	4.3 \pm 1.1	< .001 ^{*,‡}
Orgasm	4.1 \pm 1.2	4.7 \pm 1.3	4.5 \pm 1.4	< .001 ^{*,†}	4.8 \pm 1.4	4.1 \pm 1.3	< .001 ^{*,‡}
Satisfaction	4.5 \pm 1.3	4.7 \pm 1.2	4.9 \pm 1.3	.062 [†]	4.8 \pm 1.2	4.4 \pm 1.2	.004 ^{*,‡}
Pain	4.6 \pm 1.1	4.7 \pm 1.2	4.8 \pm 1.2	.261 [†]	4.7 \pm 1.3	4.2 \pm 1.2	.003 ^{*,‡}
Total score	25.6 \pm 5.5	27.3 \pm 6.1	27.3 \pm 6.7	.007 ^{*,†}	28 \pm 6.4	24.7 \pm 6	< .001 ^{*,‡}

FSFI = Female Sexual Function Index.

**P* < .05.

†Kruskal–Wallis test.

‡Mann–Whitney test.

incidence of marriage at young ages but also in the design of interventions intended to achieve replacement-level fertility. Accordingly, it is worth mentioning that education, which can lead to positive changes among people, can be more effective than issuing new laws.

The marital relationship, like individuals, follows the developmental figure that rises and falls with gains and losses. This study demonstrated a significant reduction in FSF among women who had been married for \geq 10 years. These findings are in agreement with those of previous studies reporting a linear decline in marital quality over the years.^{28–30} Nevertheless, sex education can mitigate this decline and enable people to enjoy a highly satisfying sex life in older adulthood.^{19,31}

Age has long been identified as one of the factors that may negatively correlate with sexual function. In this study, a significant decline in FSF was found among women aged \geq 40 years. However, aging may be associated with the acquisition of skills that can reduce age-related declines in sexual activity³²;

conflict management therapies to resolve marital strains can lead to greater enjoyment of life and marital satisfaction.^{1,3,31,33}

People living in developing countries are exposed to various factors that negatively affect health, including overpopulation, which drains already limited resources. The improper management of marriage-related factors can increase people's suffering, which can also be physically reflected.^{1–3,34,35} Therefore, the dissemination of accurate information to assist people in making decisions regarding the proper planning and management of marital life is a basic measure to be implemented. Accordingly, this can be positively reflected in several aspects of people's life.

CONCLUSION

The dissemination of reliable information is essential. Based on sound knowledge, people can make appropriate plans regarding the age of marriage and the number of children desired. Furthermore, everyone, not just women, should be

Table 4. Age-stratified comparisons of FSFI scores (mean \pm SD) in healthy women

	Age in years			<i>P</i> value
	Number			
	21 to <30 y 97 (35.9%) mean \pm SD	30 to <40 y 108 (40%) mean \pm SD	\geq 40 y 65 (24.1%) mean \pm SD	
Desire	4.5 \pm 0.9	3.9 \pm 1.1	3.6 \pm 1.2	< .001 ^{*,†}
Arousal	4.6 \pm 0.9	4.1 \pm 1.2	3.6 \pm 1.2	< .001 ^{*,†}
Lubrication	5.2 \pm 0.8	4.6 \pm 1.2	4.2 \pm 1.2	< .001 ^{*,†}
Orgasm	5 \pm 0.9	4.3 \pm 1.4	3.8 \pm 1.3	< .001 ^{*,†}
Satisfaction	5.1 \pm 1	4.6 \pm 1.4	4.2 \pm 1.3	< .001 ^{*,†}
Pain	5 \pm 0.9	4.7 \pm 1.2	4.2 \pm 1.2	< .001 ^{*,†}
Total FSFI score	29.1 \pm 4.5	26.1 \pm 6.3	23.6 \pm 6.0	< .001 ^{*,†}

FSFI = Female Sexual Function Index.

**P* < .05.

†Kruskal–Wallis test.

Table 5. Correlation of age of marriage (years), number of children, educational level, marriage duration (years), and age (years) with FSFI scores in healthy women

	Age of marriage	Number of children	Educational level	Duration of marriage	Age years
Desire					
R	-0.033	-0.215	0.106	-0.315	-0.354
P	.673	< .001	.083	< .001	< .001
Arousal					
R	-0.052	-0.226	0.151	-0.287	-0.353
P	.501	< .001	.013	< .001	< .001
Lubrication					
R	-0.015	-0.385	0.133	-0.328	-0.452
P	.843	< .001	.029	< .001	< .001
Orgasm					
R	-0.097	-0.267	0.217	-0.385	-0.432
P	.210	< .001	< .001	< .001	< .001
Satisfaction					
R	-0.075	-0.270	0.131	-0.225	-0.309
P	.332	< .001	.031	.003	< .001
Pain					
R	-0.073	-0.150	0.101	-0.267	-0.263
P	.342	.014	.097	< .001	< .001
Total FSFI score					
R	-0.076	-0.307	0.182	-0.365	-0.427
P	.327	< .001	.003	< .001	< .001

FSFI = Female Sexual Function Index; R = Spearman's correlation coefficient.

aware of the adverse sexual effects associated with long marriages and the age-related declines in sexual activity. Accordingly, women can achieve better sexual function.

Limitations

The study sample was not representative of all Egyptian women, thus limiting the generalizability of these findings. In addition, being a retrospective study, potential confounding factors, such as the partner's age and contraceptive use, were not considered in the analysis.

Corresponding Author: Ahmed Mohamed Hassanin, MD, Department of Andrology and Sexology, Faculty of Medicine, 1 Al-Saraya Street, Al-Manial, Cairo, 11559, Egypt. Tel: 0201129563345; Fax: 20233762269; E-mail: ahmed.hassanin@kasralainy.edu.eg or dr_hassanin@yahoo.com

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STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Ahmed Mohamed Hassanin

(b) Acquisition of Data

Ahmed Mohamed Hassanin

(c) Analysis and Interpretation of Data

Ahmed Mohamed Hassanin; Amr Nabhan Kaddah; Mohamed Yousry El-Amir

Category 2

(a) Drafting the Article

Ahmed Mohamed Hassanin

(b) Revising It for Intellectual Content

Ahmed Mohamed Hassanin; Amr Nabhan Kaddah; Mohamed Yousry El-Amir

Category 3

(a) Final Approval of the Completed Article

Ahmed Mohamed Hassanin; Amr Nabhan Kaddah; Mohamed Yousry El-Amir

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