

The Level of Understanding about Contraceptive and Human's Reproduction System among University Students

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Abstract-- The objective of this research is to determine the level of knowledge of the female students of Universiti Sultan Zainal Abidin (UniSZA) about the reproductive system and contraception methods. A questionnaire was used as an instrument to collect basic data among UniSZA female students on their knowledge about the reproductive system and human contraceptive methods. The study sample consists of 350 female students aged 18 to 26 years old. The survey instrument consisted of 24 items divided into two parts. The first part had 10 questions and the second part had 14 questions of the reproductive system and contraceptive methods. A 24 item Miller-Fisk Sexual Knowledge Questionnaire asked for general feedback regarding the questionnaire. The questions pertained to the areas of demographics and sexual knowledge regarding the reproductive system and contraceptive methods. The analysis of this study uses the discriminant analysis (DA) controls the variables that separate among two or more clearly joined group or cluster. The results obtained in the three significant value and mean ($p < 0.05$) that the student has the highest level of sexual knowledge pertaining to the reproductive system and contraceptive methods.

Keywords-- System Reproductive, Contraceptive Method, Sexual Knowledge, Questionnaire, Discriminant Analysis

I. INTRODUCTION

According to the formal definition by the World Health Organization (WHO), health is more than the absence of illness [1]. It is a state of complete physical, mental and social well-being [1]. Similarly, reproductive systems health also represents a state of complete physical, mental and social well-being, and not merely the absence of reproductive diseases or alterations [12]. The WHO defines reproductive health as a state of complete physical, mental and social well-being, and not merely the absence of reproductive disease or infirmity [12]. Reproductive systems health involves all of the reproductive processes, functions, and systems at all stages of human life [2]. This definition implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so [6].

Men and women have the right to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice that are not against the law[3]. Furthermore, men and women should have access to

appropriate health care services that will enable women to go safely through pregnancy and childbirth, as well as to provide couples with the best chance of having a healthy infant⁴. Reproductive systems health is a universal concern but is of special importance for women particularly during the reproductive years[4]. However, men also demand specific reproductive systems health needs and have particular responsibilities in terms of women's reproductive health because of their decision-making powers in some reproductive systems health matters[5]. Reproductive systems health is a fundamental component of an individual's overall health status and a central determinant of quality of life[6].

Besides women, men, or couples can choose from many contraceptive methods to help them plan their family and prevent an unplanned pregnancy[4]. They need to know that if they are having sex regularly and do not use a contraceptive method, about 8 of every 10 women will become pregnant during the next 12 months[8]. Different people want different things from a contraceptive method. Some want a method that guarantees there is no chance of pregnancy. Some want a quick return to fertility so they can get pregnant soon after stopping a contraceptive method. Some do not want to think about contraceptives every time they have sex. Some do not want to depend on their partner for the success of the method. Some women do not want to remember to take a daily pill, while others find that is ease[9]. For many people, the effectiveness of a family planning method is important. Family planning (FP) has been associated with positive health effects on children, mothers, and the entire family[11].

Moreover, the lack of sexual knowledge about contraceptive and human's reproductive system gives a more negative effect on the adolescents[7]. In the new era of globalization, adolescents are exposed to unlimited information about sex from numerous resources. Television, movies, music, magazines, and the internet play a vital role in providing information about sexual behaviors[7]. However, the information provided is not used in such a way as to practice sexually before marriage⁶. Parents and universities need to play an important role in providing sex education. Previous studies show that parents are too busy with their careers and rarely speak in a timely manner[7]. The lack of sexual knowledge among students can be increased when they have not agencies or institutions help to prevent this issues. For

examples of out-of-date pregnancy are one of the consequences of sexual problems made by adolescents today. Therefore, the objective of this study is to find out the degree sexual knowledge and the most effective method of contraception among UniSZA students.

II. METHOD

i) Instrument

The survey instrument consisted of 24 items divided into two parts. The first part had 10 questions and the second part had 14 questions of the reproductive system and contraceptive methods. A-24 item Miller-Fisk Sexual Knowledge Questionnaire [16] asked for general feedback regarding the questionnaire. The questions pertained to the areas of demographics and sexual knowledge regarding the reproductive system and contraceptive methods.

ii) Participants

The sample of this study garnered cooperation from 350 respondents consisting of UniSZA female students. 350 women are aged in the range of 18 to 26 years and above. Primarily, there are a total of 12 faculties involved in this study. Sample size from each faculty is 30 people by simple random sampling. The technique of sampling for this method using simple random sampling by each faculty [18]. There are 10 faculties with 29 respondents and the remaining 2 faculties have 30 respondents. Notably, the Faculty of Languages & Communications, Faculty of Pharmacy, Faculty of Medicine, Faculty of Islamic Affairs, Faculty of Economics & Science, Faculty of Applied Social Sciences, Faculty of Innovative Design & Technology, Faculty of Informatics & Computing, Faculty of International Law & International

Relations, Faculty of Bioresource & Food Industry, Faculty of Health Sciences and Center of Foundation for Science & Medicine. All respondents are comprised of Foundation, Diploma and Bachelor Degree.

iii) Analysis

The discriminant analysis (DA) controls the variables that separate among two or more clearly joined groups or clusters [17]. A descriptive discriminant analysis was conducted to identify which variables best discriminate the previously obtained faculty. Discriminant analysis is robust for these derived rate variables [17].

iv) Reliability

The corrected split-half reliability coefficient for total score was 67, N = 350. The mean scores for females were significantly higher (p < 0.05). Limitation wise, The study has limited apparatus in terms of measurement criteria set for poor and appropriate knowledge level. Reliable measurement tool like the 24 item Miller-Fisk sexual knowledge questionnaire [16] is used to measure knowledge, however, it includes questions focusing on topics like menstruation, pregnancy, and fertility, the majority of them are above the average level of knowledge for adolescent girls in UniSZA as they have no prior formal science or medical education.

III. RESULT

i) Summary Descriptive Statistic

Table 1 shows the summary of the descriptive statistic. Generally, the summary of descriptive statistic contents is minimum, maximum, mean and standard deviation values.

Table 1: Summary Descriptive Statistic Generally

Var.	Obs.	Obs. with missing data	Obs. without missing data	Min.	Max.	Mean	Std. devi.
Q1	350	0	350	1	4	1.65143	1.20585283
Q2	350	0	350	1	4	2.3	0.997848689
Q3	350	0	350	1	4	2.54286	0.86454709
Q4	350	0	350	1	4	2.79714	1.08730252
Q5	350	0	350	1	3	1.88286	0.330828355
Q6	350	0	350	1	33	3.13429	1.83306824
Q7	350	0	350	1	4	2.80571	1.079621832
Q8	350	0	350	1	4	2.32571	1.02528013
Q9	350	0	350	1	4	3.28653	0.862040467
Q10	350	0	350	1	2	1.99714	0.053452248
Q11	350	0	350	1	2	1.21429	0.410913342
Q12	350	0	350	1	2	1.19714	0.398410678
Q13	350	0	350	1	2	1.88571	0.318613451
Q14	350	0	350	1	2	1.18286	0.38710276
Q15	350	0	350	1	2	1.35143	0.478100005
Q16	350	0	350	1	2	1.24286	0.429423358
Q17	350	0	350	1	2	1.62	0.486081343
Q18	350	0	350	1	11	1.60286	0.70568129
Q19	350	0	350	1	2	1.82	0.384737472
Q20	350	0	350	1	2	1.21429	0.410913342
Q21	350	0	350	1	3	1.28286	0.457341085
Q22	350	0	350	1	2	1.69429	0.461368872
Q23	350	0	350	1	2	1.33143	0.471400662
Q24	350	0	350	1	2	1.40857	0.492273498

ii) Discriminant Analysis

Based on Table 2, the percentage of respondents are shown between the faculties regarding their response in sexual knowledge. The Foundation for Science and Medicine (F12)

is the faculty with the highest percentage of 34.48% (n = 29) compared to other faculties. While the Faculty of Languages & Communication (F1) has the lowest percentage of the respondents is 3.45% (n = 29).

Table 2: Confusion Matrix For The Cross-Validation Results of DA

from \ to	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Total	Correct(%)
F1	1	2	4	1	2	4	1	1	4	7	2	0	29	3.45%
F2	0	7	4	1	0	3	1	1	0	7	1	4	29	24.14%
F3	0	1	6	1	1	0	2	0	4	7	3	4	29	20.69%
F4	0	4	4	2	5	1	1	1	1	4	3	3	29	6.90%
F5	0	2	3	3	3	1	0	1	0	6	3	7	29	10.34%
F6	0	2	5	3	1	7	1	0	0	2	1	7	29	24.14%
F7	0	2	7	2	1	4	3	0	3	4	1	2	29	10.34%
F8	0	3	5	4	3	0	0	2	2	6	1	3	29	6.90%
F9	0	0	7	1	2	2	2	0	6	3	4	2	29	20.69%
F10	0	3	5	0	5	1	2	0	3	10	1	0	30	33.33%
F11	0	4	5	4	1	2	1	0	2	3	5	3	30	16.67%
F12	0	1	2	0	1	2	4	2	2	4	1	10	29	34.48%
Total	1	31	57	22	25	27	18	8	27	63	26	45	350	17.71%

Table 3 projects the DA for the average value of each measured parameter. Based on observation, researchers found that there were only three questions that were significant and had (p <0.05). {Q8} is the place for fertilization of male seed (sperm) and female seed (ovum). Based on {Q8}, the value of (p <0.0450) is smaller than the value of (p <0.05). This indicates that respondents agree with the statement that the place for fertilization of male seed (sperm) and female seed (ovum) occurs in the fallopian tube. In addition, {Q17} is a statement that unplanned pregnancy experiences a greater chance of miscarriage than a planned pregnancy. For {Q17} the value of (p <0.0146) is smaller than the value of (p <0.05). This shows that respondents agreed with the statement that unplanned pregnancy experiences a greater chance of miscarriage than a planned pregnancy. Furthermore, {Q20} is a statement that the period of sperm will remain fertile for 1-2 days after ejaculation (semen fetus) to enable pregnancy to occur. For {Q20} the value of (p <0.0105) is smaller than the value of (p <0.05). This shows that respondents agreed with the statement that the period of sperm will remain fertile for 1-2 days after ejaculation (semen fetus) to enable pregnancy to occur.

Q7			11	
Q8	0.9432	1.8506	11	0.0450
Q9			11	
Q10			11	
Q11			11	
Q12			11	
Q13	0.9511	1.5783	11	0.1034
Q14			11	
Q15			11	
Q16			11	
Q17	0.9334	2.1911	11	0.0146
Q18			11	
Q19			11	
Q20	0.9307	2.2866	11	0.0105
Q21			11	
Q22			11	
Q23			11	
Q24			11	

iii) Summary Statistics of Sexual Knowledge

Figure 1 shows a Box Plot for the place for Fertilization of male seed (sperm) and female seed (ovum) occurs in the fallopian tube {Q8}. Based on the researcher's observation, the highest average value is the Faculty of Bioresource & Food Industry at 2.83 (n = 29). The lowest average value is the Foundation for Science and Medicine is 1.93 (n = 29). The average value of the Faculty of Pharmacy is similar to the Faculty of Health Sciences which is 2.10 (n = 29). However, there is an approximate average value between the Faculty of Economics & Management Science is 2.38 (n = 29), the Faculty of Applied Social Science which is 2.40 (n = 30) and Faculty of Law & International Relations which is the average value is 2.37 (n = 30).

Table 3: Unidimensional Test Of Equality Of The Means Of The Classes

Variable	Lambda	F	DF1	p-value
Q1			11	
Q2	0.9543	1.4707	11	0.1407
Q3	0.9588	1.3196	11	0.2116
Q4			11	
Q5	0.9471	1.7179	11	0.0681
Q6			11	

Table 4: Descriptive Statistic Based On Question 8

Statistic	Min.	Max.	Mean	Std. Devi.
Faculty of Languages & Communication	1.0000	4.0000	2.5172	1.1838
Faculty of Bioresource & Food Industry	1.0000	4.0000	2.8276	0.7106
Faculty of Economics & Management Science	1.0000	4.0000	2.3793	1.0147
Faculty of Pharmacy	1.0000	3.0000	2.1034	0.9390
Faculty of Informatics & Computing	1.0000	4.0000	2.0690	1.1317
Faculty of Islamic Contemporary Studies	1.0000	4.0000	2.5517	1.0667
Faculty of Medicine	1.0000	4.0000	2.4828	0.9097
Faculty of Innovative Design & Technology	1.0000	4.0000	2.1724	0.9864
Faculty of Health Sciences	1.0000	3.0000	2.1034	1.0375
Faculty of Applied Social Science	1.0000	4.0000	2.4000	1.0122
Faculty of Law & International Relations	1.0000	4.0000	2.3667	1.0372
Foundation for Science and Medicine	1.0000	4.0000	1.9310	1.0334

Table 5: Descriptive Statistic Based On Question 17

Statistic	Min.	Max.	Mean	Std. Devi.
Faculty of Languages & Communication	1.0000	2.0000	1.5517	0.5061
Faculty of Bioresource & Food Industry	1.0000	2.0000	1.6552	0.4837
Faculty of Economics & Management Science	1.0000	2.0000	1.6552	0.4837
Faculty of Pharmacy	1.0000	2.0000	1.4828	0.5085
Faculty of Informatics & Computing	1.0000	2.0000	1.4828	0.5085
Faculty of Islamic Contemporary Studies	1.0000	2.0000	1.7586	0.4355
Faculty of Medicine	1.0000	2.0000	1.7241	0.4355
Faculty of Innovative Design & Technology	1.0000	2.0000	1.5517	0.4549
Faculty of Health Sciences	1.0000	2.0000	1.7241	0.5061
Faculty of Applied Social Science	1.0000	2.0000	1.3667	0.4549
Faculty of Law & International Relations	1.0000	2.0000	1.7333	0.4901
Foundation for Science and Medicine	1.0000	2.0000	1.7586	0.4498

Figure 1: Box Plots {Q8}

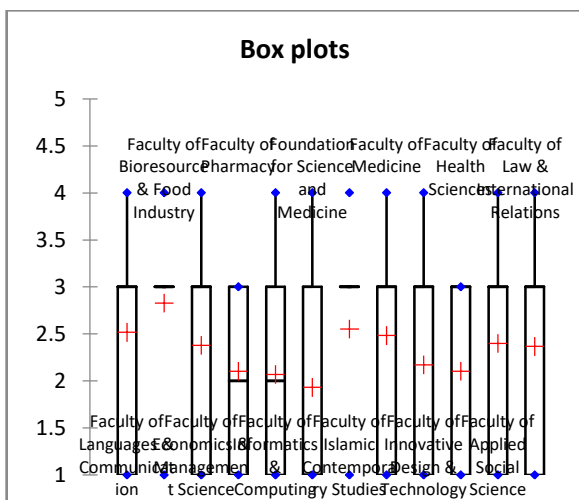
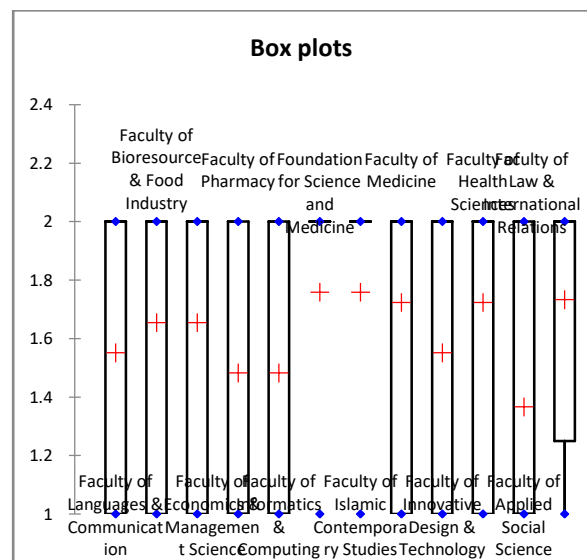


Figure 2: Box Plots {Q17}



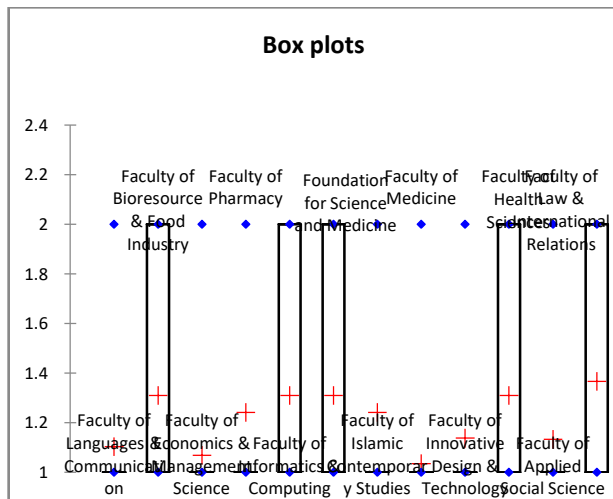
Based on Figure 2, Box Plots indicate that unplanned pregnancy experiences a greater chance of miscarriage than planned pregnancy {Q17}. Based on the researcher's observation, the highest average value is the Faculty of Islamic Contemporary Studies and Foundation for Science and Medicine which is 1.75 (n = 29). The lowest average value is the Faculty of Applied Social Science which is 1.37 (n = 30). The average value of the Faculty of Economics & Science is similar to the Faculty of Bioresource & Food Industry at 1.66 (n = 29). However, the average value of the Faculty of Pharmacy is similar to the Faculty of Informatics & Computing at 1.48 (n = 29). Besides, the average value of the Faculty of Medicine is similar to the Faculty of Health Sciences which is 1.72 (n = 29). Last, the average value of the Faculty of Languages & Communication is similar to the Faculty of Innovative Design & Technology at 1.55 (n = 29).

Based on Figure 3 shows a Box Plot for the period of the sperm will remain fertile for 1-2 days after ejaculation (semen fetus) to enable pregnancy to occur {Q20}. Based on the researcher's observation, the highest average value is the Faculty of Law & International Relations at 1.37 (n = 30). The lowest average value is the Faculty of Medicine is 1.03 (n = 29). The average value of the Faculty of Bioresource & Food Industry is similar to the Faculty of Health Sciences, Faculty of Informatics & Computing and Foundation for Science and Medicine which is 1.31 (n = 29). Furthermore, the average value of the Faculty of Islamic Contemporary Studies is similar to the Faculty of Pharmacy at 1.24 (n = 29).

Table 6: Descriptive Statistic Based On Question 20

Statistic	Min.	Max.	Mean	Std. Devi.
Faculty of Languages & Communication	1.0000	2.0000	1.1034	0.3099
Faculty of Bioresource & Food Industry	1.0000	2.0000	1.3103	0.4708
Faculty of Economics & Management Science	1.0000	2.0000	1.0690	0.2579
Faculty of Pharmacy	1.0000	2.0000	1.2414	0.4355
Faculty of Informatics & Computing	1.0000	2.0000	1.3103	0.4708
Faculty of Islamic Contemporary Studies	1.0000	2.0000	1.2414	0.4708
Faculty of Medicine	1.0000	2.0000	1.0345	0.4355
Faculty of Innovative Design & Technology	1.0000	2.0000	1.1379	0.1857
Faculty of Health Sciences	1.0000	2.0000	1.3103	0.3509
Faculty of Applied Social Science	1.0000	2.0000	1.1333	0.4708
Faculty of Law & International Relations	1.0000	2.0000	1.3667	0.3457
Foundation for Science and Medicine	1.0000	2.0000	1.3103	0.4901

Figure 3: Box Plots {Q20}



IV. DISCUSSION AND CONCLUSION

In general, among the 12 faculties, one of the faculties found the highest percentage in this study, the Foundation for Science and Medicine at 34.48% (n = 29) compared to other faculties. This is because the faculty provides subjects of Sexual Knowledge subjects in the first semester and they are encouraged to answer this study to increase their knowledge as well as relying on theoretical learning in the classroom. Based on the 24 questions given, there are only three significant questions with the value (p <0.05). These three significant questions are based on the Discriminant Analysis (DA) results.

The process of fertilization is the process of merging between sperm and ovum to form zygote[19]. For fertilization to occur, the sperm is released into the uterus through the cervix and

moves into the fallopian tubes by swimming to it[21]. Sperm is then released with male sex organs mixed with semen secretions and prostate glands that are important to keep the sperm alive and swim[22]. Fertilization occurs in a woman's fallopian tubes. This fertilized ovum is called a zygote and it develops into the embryo while moving towards the uterus for the ingestion process[23]. On average, this study (0.045), p <0.05 showed that the respondent knew and understood that the process of fertilization occurred in the fallopian tube.

In addition, Question 17 explains that unplanned pregnancy will pose a greater chance of miscarriage than a planned pregnancy. Based on the previous study, it is found that unplanned pregnancies were more easy for miscarriages because of the low status of the mother's education[24], therefore the mother did not know how to take care of herself when she was pregnant. In addition, the knowledge level of[25]pregnant women who are likely to develop unplanned pregnancies is easier for abortion than planned pregnancies. According to Russel, women's immature attitudes, insensitivity towards stimulation and women who often experience emotional and mental stress are more susceptible to miscarriage, especially with unplanned pregnancies[26]. Personal factors such as impatience, aggressiveness, overly focused on career, ease of life, and easily tense muscles are at high risk for a miscarriage during pregnancy[24].The previous study suggests that younger women are more stressful and contribute to miscarriage in pregnancy if the woman does not manage to control her emotions[26]. A miscarriage occurs if the uterus and body condition is not ready to accept the new fetus[27]. The average (0.015), p <0.05 indicates that many people today know that unplanned pregnancies are more likely to occur miscarriage than planned pregnancies.

Furthermore, Question 20 shows that the period of sperm fertility will remain for 1-2 days after ejaculation (semen fetus) to enable pregnancy. The egg (ovum) can live no more than 24 hours after ovulation[27]. Therefore, the fusion of eggs and sperm must occur at this time. However, male (sperm) seeds may last longer for up to seven days in a woman's vagina, uterus or fallopian tube[28]. This means that the couple does not have to schedule sex right during ovulation to become pregnant[27]. A woman has a "fertile space" for six days after ovulation[23]. Therefore, if sexual intercourse happens in this fertile time, the newly fertilized egg will have the opportunity to fuse with a healthy and radiant sperm[29]. According to Payne, the sperm will continue to grow and remain active for 7 days after ejaculation (semen fetus) to enable pregnancy to occur[30]. A woman has a fertile period of about 6 days in 1 month [19]. In these 6 days, there are 1-2 days considered as the most fertile[30]. Fertilization that takes place in the most fertile 1-2 days will have an easier fertilization process[19].

Based on this study, the Faculty of Foundation for Science and Medicine has the highest percentage 34.48% (n = 29) compared to other faculties. At the same age, the majority of the respondents were 23 years old (n = 176) compared to

other ages. As a result, the majority of programmes in this study are of Bachelor's Degree. However, there are three significant questions proving that the level of understanding about contraceptive and human's reproduction system among university students. This study is very similar to previous studies particularly on the place of fertilization of male seed (sperm) and female seed (ovum) occurs in the fallopian tube[21]. Another previous study about unplanned pregnancy experiences a greater chance of miscarriage than planned pregnancy[26]. Based on the previous study[30], there are many researchers who supported that the period of the sperm will remain fertile for 1-2 days after ejaculation (semen fetus) to enable pregnancy to occur. This proves that the understanding of deep sexual knowledge on UniSZA's students pertaining reproductive and contraceptive system is very low as they lack knowledge about sexuality in their lives.

On a conclusive notion, the reproductive health system is an important component in every individual. There are many countries that put reproductive health problems into developmental issues for the benefit of their denizens[7]. Failure to indulge in this issue will lead to birthing individuals who do not understand sexuality. Today's adolescents will contribute more towards sexual activity and problems such as unwanted pregnancies (offspring)[20]. Therefore, sexuality knowledge is very important to teenagers so that they can control themselves from being involved in undesirable problems, specifically sexual problems[15]. Early exposure should be given to them to allow them wise rationalizations when faced with sexual abuse against self, family and their society[13].

REFERENCE

- [1]. WHO. Department of Reproductive Health and Research, Partner Brief. Geneva, Switzerland, World Health Organization, 2009. WHO/RHR/09.02. Available at whqlibdoc.who.int/hq/2009/WHO_RHR_09_2_eng.pdf – accessed 15 June 2011
- [2]. Ingham, Roger. 2013. "A Well Kept Secret: Sex Education, Masturbation, and Public Health." In *The Politics of Pleasure in Sexuality Education: Pleasure Bound*, edited by Louisa Allen, Mary Lou Rasmussen, and Kathleen Quinlivan, London: Routledge.
- [3]. Marianibt. Md. Nor & Hamidahbt. Sulaiman. (2005). *Seks Bebas: Mengenal Pasti Punca Perilaku dalam Roziah Omar dan Sivamurugan Pandian*. Malaysia Isu-isu Sosial semasa: Unit Penerbitan ISM Kementerian Pembangunan Wanita, Keluarga dan Masyarakat.
- [4]. Rani, M., & Lule, E. (2004). Exploring the socioeconomic dimensions of adolescents' reproductive health: a multicountry analysis. *International Family Planning Perspectives*, 30(3): 110-117.
- [5]. Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Ross, J., Hawkins, J., & Wechsler, H. (2010). Youth Risk Behavior Surveillance: (2009) Morbidity And Mortality Weekly Report. *Surveillance Summaries*, 59(SS05): 1-142.
- [6]. Leiblum, S., Wiegel, M., & Brickle, F., Statistical Consultant, & Private Practice. (2003). *Sexual Attitudes Of US And Canadian Medical Students: The Role Of Ethnicity, Gender, Religion, And Acculturation. Sexual and Relationship Therapy*, 18(4): 473–491.
- [7]. Lee, S. H., Stark, A. K., O'Riordan, M. A., & Lazebnik, R. (2015). Awareness Of A Rape Crisis Center And Knowledge About Sexual Violence Among High School Adolescents. *Journal Of Pediatric And Adolescent Gynaecology*, 28:53–56.
- [8]. Moise F: Sexual And Reproductive Rights Of Young People: Haiti Experience – Findings Of A Project Implemented By The Foundation For Reproductive Health And Family Education. *Sexual Health Exchange* 1999, 4(5).
- [9]. Moyano, N., Monge, F. S., & Sierra, J. C. (2017). Predictors Of Sexual Aggression In Adolescents: Gender Dominance Vs. Rape Supportive Attitudes. *The European Journal of Psychology Applied to Legal Context*, 9:25–31.
- [10]. Oppedal, B., Røysamb, E., & Heyerdahl, S. (2005). Ethnic Group Acculturation, And Psychiatric Problems In Young Immigrants. *Journal of Child Psychology and Psychiatry*, 46(6): 646–660.
- [11]. Center for Rights, Education, and Awareness: Exploring sexuality a Youth Perspective Series: A journey towards embracing sexual rights. In *Setting Standards in Upholding Women's Rights*. Nairobi: Center for Rights, Education and Awareness; 2006.
- [12]. Farooq, G. (2000). Report of the UNFPA Inter-country Workshop Adolescent Reproductive Health for East and South East Asia and the Pacific Island Countries. UNFPA Country Technical Services Team for East and South-East Asia Bangkok.
- [13]. McMillan, J. H. (2012). *Education Research Fundamentals For The Consumer*. Amerika Syarikat: Pearson.
- [14]. Santrock, J. W. (2006). *Life-Span Development*. Boston: McGraw Hill
- [15]. Hoyle, R. H. (1999). *Statistical Strategies For Small Sample Research*. Thousand Oaks, CA: Sage Publications.
- [16]. Gough, H. (1974). A 24-Item Version Of The Miller-Fisk Sexual Knowledge Questionnaire. *The Journal of Psychology*, 87: 183-192.
- [17]. Klecka, W. R. (2003). *Discriminant Analysis*. Newbury Park, CA: Sage Publ.
- [18]. Ashworth, J. (1992). *A New Soil Sampling Technique For Soils With Residues Of Banded Fertilizer*. Edmonton, AB: Norwest Soil Research. Department of Health. 2017. *A Framework for Sexual Health Improvement in England* London: Department of Health.
- [19]. Aronowitz, T., Lambert, C. A., & Davidoff, S. (2012). The Role Of Rape Myth Acceptance In The Social Norms Regarding Sexual Behaviour Among College Students. *Journal of Community Health Nursing*, 29(3): 173–182.
- [20]. Chang MC. Fertilizing Capacity Of Spermatozoa Deposited Into The Fallopian Tubes. *Nature* 1951; 168:697-698.
- [21]. Austin C, Bishop M. Role Of The Rodent Acrosome And Perforatorium in Fertilization. *Proc. Roy. Soc. B* 1958; 149:241.
- [22]. Aguilar J, Motato Y, Escribá M-J, Ojeda M, Muñoz E, Meseguer M. The Human First Cell Cycle: Impact On Implantation. *Reprod Biomed Online* 2014;28:475-484.
- [23]. Berhane F, Berhane Y, Fantahun M: Adolescents' Health Service Utilization Pattern And Preferences: Consultation For Reproductive Health Problems And Mental Stress Are Less Likely. *Ethiop J Health Dev* 2005, 19(1):29–37.
- [24]. Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic Identity, Immigration, And Well Being: An International Perspective. *Journal of Social Issues*, 57(3): 493–510.
- [25]. Russell, M.W. & Mestecky, J. 2002. Humoral Immune Responses To Microbial Infections In The Genital Tract. *Microbes Infect.* 4: 667-677.
- [26]. Maes, C. A., & Louis, M. (2011). Nurse Practitioners' Sexual History-Taking Practices With Adults 50 And Older. *Journal for Nurse Practitioners*, 7: 216-222.
- [27]. Lundin K, Bergh C, Hardarson T. Early Embryo Cleavage Is A Strong Indicator Of Embryo Quality In Human IVF. *Hum Reprod* 2001;16:2652–2657.
- [28]. Mio Y. Human Embryonic Behavior Observed By Time-Lapse Cinematography. *J Health Med Inf* 2013;04:1–8.
- [29]. Payne D, Flaherty SP, Barry MF, Matthews CD. Preliminary Observations On Polar Body Extrusion And Pronuclear Formation In Human Oocytes Using Time-Lapse Video Cinematography. *Hum Reprod* 1997;12:532–541.