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Contents

Impact of Psychological Wellbeing and Physical Activity on Life Satisfaction among Elderly in Geriatric Homes

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Abstract

Life satisfaction among elderly in geriatric homes is becoming an important issue in a rapidly aging population, Life satisfaction is consider an indicator of well-being among the elderly, and is directly connected with health and mortality. This study aimed to investigate the impact of psychological wellbeing and physical activity on life satisfaction among elderly in geriatric homes. A descriptive study using randomly stratified sampling procedure was conducted among140 elderly based on criteria in fourth Geriatric Homes at Cairo. The data was collected using Socio demographic data of elderly individual, The psychological wellbeing scale, and Katz Index to assess activity of daily life (ADL) of the elderly, and 13-item LSIZ to measure satisfaction with life. The results indicated that elderly population at geriatric homes was independent in most of their daily activities but need assistance in grooming, and transferring. Also results indicated that mostly of them had low psychological well being, with low positive affect, and had high negative affects. Furthermore, there was positive highly statistically significant relation of the physical activity ,psychological well-being, and with life satisfaction. These results concluded that the psychological well being and physical activity affected on life satisfaction of elderly at nursing homes. The study had implications for further studies to explore other reasons for low satisfaction of life, and interventions program focus on promote life satisfaction and increase successfully aging.

Key words: Psychological wellbeing, Physical activity, Life satisfaction, Elderly, Geriatric homes.

Introduction

Ageing defined as a developmental fact that clarify the accumulation of changes in a human being over time, such as physical, psychological, and social change. An elderly people become increasingly dependent on others. As people grows, they declines in their physical, psychological, social and sensory capabilities, in addition to their position of their families and their life in society becomes more vulnerable. Elderly persons begins to feel that even their children neglected and humiliated them which may lead them to development of psychological problems as low self esteem ,isolation, depression which affects their life satisfaction[(1)]

There are some psychosocial factors that have been associated with an increased individual life expectancy and life satisfaction in older adults. Psychological well-being refers to how people evaluate their lives. It is considered as an indicator of coping during old age period. Psychological well-being considered widely as an important need to improve the state of mental conditions among elderly. [(2)]

Physical activity is defined as "any bodily movement produced by the skeletal muscle that results in energy expenditure, the level of physical activity is often used as a parameter for monitoring and evaluation of health status [(3)] This monitoring is especially important for older people aged 60 and over because of prevention of many diseases.

Life satisfaction (LS) defined as "an internal and subjective perception, the individuals' evaluation of their lives "and it determine the efficacy of old age .it is an important component of successful aging which differs from person to person. Some elderly accomplish sense of fulfillment and satisfaction with their ageing process, while others become sensitive and aggressive to the changes of old age and scar on the decline of their physical activities. higher life satisfaction coupled with changing needs that may require social support, highlight the importance of understanding the living arrangements. Older people may experienced positive affective states and negative affective states in their health and life satisfaction, positive affect reflects one's level of energy, excitement and enthusiasm, meanwhile negative affect is a general dimension of subjective distress. [(4,5)]

Significance of the study

According to WHO, there is an estimated 600 million people above the age of sixty years and this will go up to an estimated 1.2 billion individuals by the year 2025. In Egypt only, according to [(6)]**.** the proportion of elderly hit about 7.8 percent of Egypt's total population,

number of older people in Egypt in 2013 reached 6,461,078 million persons**.** As life expectancy increases, the concern of maintaining psychological well-being in elderly is becoming more important. furthermore, it is crucial to be aware of the determinants of psychological well-being and its correlation with health outcome in persons at homes [(7)]**.** Entering institutions is generally considered a stressful event among elderly individuals, and most of them perceive institutionalization as a stigma and a place to go to die. So., it is important to better understand the impact of psychological wellbeing and physical activity on life satisfaction among elderly in geriatric homes.

Aim of the study is to: Investigate the impact of psychological wellbeing and physical activity on life satisfaction among elderly in geriatric homes

Hypothesis: Elderly individuals in geriatric homes are more liable to be a significantly positive relationship between psychological wellbeing and life satisfaction and between physical activity and their life satisfaction

Study design

This study is a descriptive study.

Setting

The study was conducted in Geriatric Homes; these geriatric homes are geographically representing four sectors in the Great Cairo as: east, west, south and north,

- Dar Samaan (North Cairo).
- Dar Al Safa (East Cairo).
- Dar Boutros-Ghali for the elderly (west Cairo).
- Elderly Islamic charity (South Cairo)

Subjects of the Study:

The subjects of the present study included 140 elderly individuals (were males & females). The sample was taken from 4 geriatric homes; elderly individuals selected randomly stratified 35 for every geriatric home has the following criteria:

- Age $\geq$ 60
- Both sexes
- Have no severe cognitive impairment
- Period of staying in geriatric homes above one year
- Free from any psychiatric illness

Field work

The process of data collection was carried out in the period from the beginning of June 2015 to the end of August 2015,At

the first the researchers introduced themselves and briefly explained the study objectives to the elderly. The researcher visited the selected settings affiliated to social solidarity agency representing four sectors in the Great Cairo as east, west, south and north. Dar Samaan (North Cairo). Dar Al Safa (East Cairo). Dar Boutros-Ghali for the elderly (west Cairo). Elderly Islamic charity (South Cairo) at two days in Thursday and Friday) from 10.00 am to 3.00 PM. The researcher assessed and observed every selected subjects under study through only one session, in which the researcher fulfilled the subsequent items of the established tools lasted from 20-30 minutes for each subjects included in the study. A total of 140 elderly individuals (male and female) who agreed to participate in the were assured that the information collected would be treated confidentially & that it would be used only for the purpose of the study.

Ethical consideration:

The ethical research considerations in this study included the following:

- The research approval obtains before conduct the study
- Subjects are allowed to choose to participate or not participates 'voluntary participation' and they have the ability to leave the study at any time with no penalty.
- The researcher describes the objective and aim of the study to subjects.
- Maintain confidentiality and anonymity for every selected elderly who involved on the study sample.
- Clarifying that all information will be used for scientific research only

Tools of data collection:

1- Socio demographic data of elderly individual:

It was designed by the researcher to assess social state of elderly individuals in geriatric homes. The questionnaire sheet comprised from socio-demographic characteristics of subjects, it includes: (age, sex, marital status, occupation, educational level, Employment condition, monthly income, source of income, Health insurance, Smoking, Residence).

2- Katz Index of independence in ADL:

It is the most appropriate tool to assess activity of daily living(ADL) of the elderly. It was developed by [8]. It lines the performance in six basic function of independent living (bathing, dressing, toiling, transferring, grooming, and eating).

Scoring system:

- Totally dependent: 0-5
- Need assistant: 6-9
- Independent: 10-12

3- Psychological wellbeing.

The psychological wellbeing scale is also known as (the Affect Balance Scale). It was developed by **[9]** to the elderly. The scale is made up of 10 statement classified in two components: the positive affect which consist of 5 statements and the negative affect component which also consist of 5 statements. The Participants answer "Yes" or "No" to the following: **Positive affect questions** as During the past few weeks Did you feel (particularly excited or interested in something? Proud because someone complimented you on something you had done? ,Pleased about having accomplished something? On top of the world? That things were going your way?) and **Negative affect questions** as During the past few weeks Did you feel (so restless that you couldn't sit long in a chair? Very lonely or remote from other people? Bored? ,Depressed or very unhappy? Upset because someone criticized you?)

Scoring System in this study

- For positive affect component, the elderly receive 2 degree for every "Yes" they say and 1point for every "No".
- The low positive was less than 5 and more than 5 were considered high positive. For negative affect component, the elderly receive 2 degree for every "No" they say and 1point for "Yes".
- The low negative were more than 5 and less than 5 were considered high negative for every "Yes".
- The overall "balance" score is created by subtracting the negative affect score from the positive affect score

4 - Satisfaction with life.

- We measured satisfaction with life by using the13-item LSIZ **[10]** it is a short form of the LSIA **[11]**. We used a 3-point scale (agree, disagree and unsure). The analysis yielded three factors from the LSIZ item responses, the first factor having the highest descriptive

power, and it represented positively worded of satisfaction with the present life as in (Items 1, 4, 5, 7, and 9). The second factor was identified as Mood, that representing negatively worded in the present life

- satisfaction and mood tone as in (Items 3, 6, 11, and 13) and The third factor was identified as Congruence which represented the past life satisfaction and congruence as in (Items 2, 8, 10, and 12).
- Scoring *system*
- Each item were scored in 3 point likert scale (Agree=2, disagree=1, Unsure=0). For agree answers the participant take 2, and 1 for unsure, and zero for disagree answers. Meanwhile items of 3, 6, 10, 11, and 13 were coded in reverse for analysis. So, the score classified to the following: Mild from (0 - 8), Moderate from (9 -17) and Severe from (18-26).

Pilot study:

The pilot study was conducted on 10 elderly that they are executed from the total sample in order ensure the clarity of questions, applicability of the tools and the time needed to complete them and determining sample size.

Statistical design

the statistical package for social science (SPSS) program version 22. First part of data was descriptive data which were revised, coded, tabulated and statistically analyzed using the proportion and percentage, the arithmetic mean(X), standard deviation (SD). The second part was analytical statistics to test statistical significant difference . For qualitative data, Chi square test X, R-Test and p- value were used to test associations among the variables. Statistical significance was considered at p-value <0.05, highly significant difference obtained at $p < 0.00l$ and non significant difference obtained at $p > 0.05$**.**

Results:

Table (1) clarifies the socio-demographic characteristics of residents in geriatric homes who participate of study; this table shows that the mean age of the studied sample was 78.08. Sixty-seven percent were male, percent were married and 90.7% was lived in urban area. Nearly to two third were widow (63.5%) and smoked (62.1%), and more than half of them (52.1%) have children, had mid- education (59.3%), their financial resources is from pension (57.9%), and only 21.4% from relatives.

Regarding the pattern of physical activity among elderly individuals under the study, **table (2, 2a)** presented that the most of studied subjects are independent in their daily activities items, except in transferring item which only twenty of them are independent, while two quarter of them (75%) need assistance. Over all total score of Physical activity, nearly to three quarter of them are independent (72.2%).

Table (3) presents information about the psychological wellbeing of elderly population at geriatric homes. It can be observed from the study that more than three-fourth (80%) of the institutionalized elderly had low positive effect. The same result was also found with negative effect that the majority(71.4%) of elderly had high negative effects. The study further reveals that three-fourth of the elderly in geriatric homes scored low on psychological well being.

Concerning life satisfaction among elderly individual in geriatric homes, mostly elderly in study agree to life satisfaction items except more than two third of them disagree with items 1, 5, 9. Also this table show that more than two third (66.4%) have mild satisfaction about their life and nearly to quarter (22.1%) are moderate but only 11.5% have sever life satisfaction **(Table 4, 4a).**

As regards to relationships between psychological well being and life satisfaction among elderly individual in geriatric homes, T**able 5** illustrated that they are highly significant (p= 0.000) between psychological well being of elderly and their life satisfaction level, which the elderly with low positive effect and high negative effect had mild satisfaction about their life. It can be concluded from the study that the psychological well being of the elderly impacted on their life satisfaction.

Table 6 reveals that the relationship between physical activity and life satisfaction among elderly individual in geriatric homes, they are highly significant (p= 0.01) between physical activity of elderly and their life satisfaction level, which all the elderly with total and need assistant had mild life satisfaction, also more than half of independent elderly has mild and one third of them had moderate satisfaction about their life. This indicates that the impact of physical activity on life satisfaction.

Table 7 clarifies that there were a significantly positive relationship between psychological wellbeing and physical activity of elderly individuals in geriatric homes. Furthermore, highly statistically significantly positive relationship between physical activity, psychological wellbeing and their life satisfaction.

Table (1): Percentage Distribution of Socio-demographic Characteristics of Elderly Individuals in Geriatric Homes

Items	**Geriatric home (no=140)**	
	No.	**%**
Age (Years):		
60- <70	42	30
70- <80	77	55
80 +	21	15
Mean ±SD 78.08± 8.04		
Sex:		
Female	46	32.9
Male	94	67.1
Marital status:		
Single	11	7.9
Divorced	8	5.7
Married	32	22.9
Widow	89	63.5
Having children:		
No	67	47.9
Yes	73	52.1
Education:		
Illiterate	14	10
Read & Write	27	19.3
Mid-Education	83	59.3
University	16	11.4
Past working Status:		
Working	35	25
Not working	105	75

Table (1): Distribution of Socio-demographic Characteristics of Elderly Individuals in Geriatric Homes (Cont.)

Items	Geriatric home	
	No. (140)	**No. (140)**
Type of occupation:		
Professional	36	25.8
Sales and Services	29	20.7
Technical	45	32.1
House wife	30	21.4
Monthly income (L.E.):		
Adequate	77	55
Barely adequate	52	37.1
Not adequate	11	7.9
Source for income:		
Pension	81	57.9
Social Insurance	29	20.7
Relatives (children)	30	21.4
Health insurance:		
Present	110	78.6
Not present	30	21.4
Smoking:		
Smoker	87	62.1
Non smoker	53	37.9
Residence:		
Urban	127	90.7
Rural	13	9.3

Table (2) Pattern of Physical Activity among Elderly Individuals Under Study

Items	Geriatric home	
	No	**%**
1) Eating:		
Totally dependent	18	12.9
Need assistance	30	21.4
Independent	92	65.7
2) Toileting:		
Totally dependent	7	5
Need assistance	21	15
Independent	112	80
3) Bathing:		
Totally dependent	7	5
Need assistance	24	17.1
Independent	109	77.9
4) Dressing:		
Totally dependent	3	2.1
Need assistance	17	12.1
Independent	120	85.8
5) Grooming (combing, shampooing hair showering, trimming nails):		
Totally dependent	14	10
Need assistance	56	40
Independent	70	50
6) Transferring:		
Totally dependent	7	5
Need assistance	105	75
Independent	28	20

Table (2a): Physical activity (score) among elderly individuals under study

Items	Geriatric home	
	No	%
Totally dependent (0-5)	9	6.4
Need assistant (6-9)	30	21.4
Independent (10- 12)	101	72.2

Table (3): Psychological well being among Elderly Individual in Geriatric Homes

Items	Elderly Individual In Geriatric Homes	
	No.	**%**
Positive		
• High	28	20
• Low	112	80
Negative		
• High	100	71.4
• Low	40	28.5
Affect Balance		
• High	34	24.3
• Low	106	75.7

Table (4): Percentage of life satisfaction among Elderly Individual In Geriatric Homes

Statements	Agree %	Disagree %	Unsure %
1- As I grow older, things seem better than thought they would be	23	67	10
2- I have gotten more of the breaks in life than most of the people I know	77	12	11
3- This is the dreariest time of my life	97	3	0
4- I am just as happy as when I was younger	91	5	4
5- These are the best years of my life	33	65	2
6- Most of the things I do are boring or monotonous	90	3	7
7- The things I do are as interesting to me as there ever were.	40	35	25
8- As I look back on my life, I am fairly well satisfied	55	27	18
9- I have made plans for things I'll be doing in a month or a year from now	33	62	5
10- When I think back over my life, I didn't get most of the important things I wanted.	81	15	4
11- Compared to other people, I get down in the dumps too often.	70	28	2
12- I've gotten pretty much what I expected out of life.	39	47	14
13- In spite of what some people say, the lot of the average man is getting worse, not better	77	20	3

Table (4a): Level of life satisfaction among Elderly Individual In Geriatric Homes

Level of life satisfaction	No	%
• Mild	93	66.4
• Moderate	31	22.1
• Sever	16	11.5

Table (5): Impact of Psychological well being on life satisfaction among Elderly Individual In Geriatric Homes

Items	Life satisfaction			X2	p-value
	Mild %	Moderate %	Severe %		
Positive Affect					
• High	28	0	0	17.688	0.000
• Low	65	32	15		
Negative Affect					
• High	93	7	0	113.203	0.000
• Low	0	25	15		
Affect Balance					
• High	28	7	0	14.000	0.000
• Low	65	25	15		

Table (6): Impact of physical activity on life satisfaction among Elderly Individual in Geriatric Homes

Items	Life satisfaction			X2	P value
	Mild	Moderate	Severe		
Physical activity:-					
Totally dependent	9	0	0	27.32	.001 H.S
Need assistant	30	0	0		
Independent	54	32	15		

Table (7): Relationship between total psychological wellbeing, physical activity and life satisfaction among elderly in geriatric homes

Variable	R	T	P
• Relation between psychological wellbeing and physical activity	.296[a]	-8.565	0.000*
• Relation between physical activity and life satisfaction	.376[a]	20.02	0.000*
• Relation between psychological wellbeing and life satisfaction	.736[a]	21.14	0.000*

*Is set of highly statistically significant (p=0.000)

Discussion

The aging process is associated with an increased incidence of both mental and physical health concerns and disabilities. It has been observed that physical diseases, psychological illness and adjustment problems are extremely common during this phase of life**.** Poor mental health is an important consideration for the older population, it appears to be a significant component of life satisfaction which affected by various physical, emotional, social and mental conditions [(12)]**.** This present study investigated the impact of psychological wellbeing and physical activity on life satisfaction among elderly in geriatric homes.

With regard to physical activity, the results of present study found that most of studied subjects were independent in their daily activities as eating, toileting, bathing and dressing but half of them need assistance in grooming, and two quarter of them need assistance transferring, .but in general about two quarter of them were independent in performing daily activities These could be due to pain and suffering, they could have difficulty in walking, resulting in needing assistance in their activities of daily living as grooming and transferring. This theme is similar to those found in previous study done in China by [(13)]**.** who reported that the study sample from Chinese nursing home residents had moderate deficiency in ADL. The same phenomenon was observed in this study performed by [(14)]**.** who shown that elderly living in the nursing home have physical disabilities affecting activities of daily living such as walking. The categories of ADL: hygiene, transportation, shopping, cooking, bathing, clotting, toilet, transfer, eating were significantly common with higher scores in the resting home group. It is usually unrealistic to expect good results in functional independence, cognitive performance and mobility level in older people at the age of 65 years or above.

Psychological well-being refers to how people evaluate their lives. The present study found that three-fourth of the elderly in geriatric homes scored low on psychological well being, with low positive effect, and had high negative effects. Similarly, A study done in India on the psychological wellbeing of institutionalized elderly population by [(15)]**.** who found that more than three-fourth of the institutionalized elderly had low positive affect. The same result was also found with negative effect, where as more of half institutionalized elderly sample scored high on negative affect. It can be concluded from the study that institutionalization has impact on the

psychological well being of the elderly. Moreover, a study was conducted by [16]. on psychological well being of elderly individuals in India. It was found that institutionalized aged experience poor sense of psychological well being. On same line, [17]. who conducted a study on psychological well being inhabitants of old age homes of Jaipur and found that low of psychological well-being. As old age home have become an unavoidable choice, care should be take to maintain the psychological health of the elderly

Concerning life satisfaction among elderly individual in geriatric homes, the findings of this study showed that more than two third have mild satisfaction about their life and nearly to quarter are moderate but only 11.5% of them were satisfied about their life. On same line[18] found that most of the inhabitants of the selected old age homes at India were having low to moderate satisfaction with life as per test scores, and also small number of participants expressed that their conditions of life was excellent and satisfied with the present living environment. Additionally, a study done in Turkey by [19] showed that One-third the elderly were not satisfied with their lives. These results disagreed with a study done in Brasil by [20]who reported that about 6.1% of the elderly reported that they were dissatisfied, 28.2% were moderately satisfied, and 65.6% were very satisfied with life. Analysis was run on data collected from 2322 subjects who were the Malaysian elderly; the prevalence of life satisfaction was 90.4 % among subjects [21]

Over the last few decades, increasing attention has been paid to the issue of well-being among the elderly, and life satisfaction has been used as an indicator to evaluate older people's life conditions. Therefore, our results found the evidence of statistically significant relation of the physical activity and psychological well-being with life satisfaction. The same results were observed in previous studies [22,23]. This finding is supported by the work of [24] who showed that the physical health impairments is association with psychological well-being among older. In this respect, [25]. stated that who had poor physical health had indicated that they had low life satisfaction. This is consistent with other study done by [26,27] who stated that the life satisfaction relate intimately to healthy aging, and significant correlation between life satisfaction and physical activity among elderly. Similarly, [28] who found that there were large effect of physical and psychological well-being on life satisfaction and it was the major

predictor of life satisfaction among elder. This could be explained that older people who are not able to manage daily life with reduced self-care capacity alters the view of aspects of their life satisfaction. Finally, the current results point out the important of improve psychological well-being and physical activity, which consequently on life satisfaction.

Conclusion

Based upon the study results, it is concluded that the elderly population at geriatric home were independent in most of their daily activities as eating, toileting, bathing and dressing but need assistance in grooming, and transferring. Also results indicated that mostly of the elderly in geriatric homes scored low on psychological wellbeing, with low positive effect, and had high negative effects. Furthermore, there was positive statistically significant relation of the physical activity and psychological well-being and with life satisfaction. These results ascertained that the psychological wellbeing and physical activity affected on elderly life satisfaction at nursing home.

Recommendation

Based on the above results this study recommended that:

- Physical activities and counseling program are necessary for raise the psychological-wellbeing of elderly population.
- Counseling interventions program for elderly should be done to enhance their life satisfaction and increase successfully aging.
- Future studies to explore reasons for low satisfaction of life. This will help identify how to enhance and strengthen the life conditions for elderly in the community

References:

1-Basakha M; Yavari K; Sadeghi H; Naseri . "Population Aging And Iran's Non-Oil Economic Growth". Payavard Salamat 2015;**9** (2): 131–146.

2- **Medical Research Council (2010).** Lifelong Health and Well-Being Program me, A Strategy for Collaborative Ageing Research in the UK, London.2015;19(1): 78.

3-Banjare, P., Dwivedi, R., & Pradhan, J. Factors associated with the life satisfaction amongst the rural elderly in Odisha, India Health and Quality of Life Outcomes 2015;13:201.

4- **Efklides A, Maria K, Grace C.** Subjective quality of life in old age in Greece, the effect of demographic factors, emotional state, and adaptation to aging. Eur Psychol. ;8:178–191.

5-Hang KC, Hong IS. Assets and Life Satisfaction Patterns among Korean Older Adults: Latent Class Analysis. Asset and Life Satisfaction Patterns.2013 ;100:225–240.

6-Central Agency for Public Mobilization and Statistics (CAPMAS),(2015), cairo, Egypt.

7-Steptoe, A., Demakakos, P., and Wardle, J. (2012). Distinctive biological correlates of positive psychological well-being in older men and women, Psychosomatic Medicine; 74: 501–8.

8- Katz, S.; Ford, A.B.; Moskowitz, A.W.; and et al., (1969): Studies of Illness in Aged, The Index of ADL: A standardized Measure of Biological and Psychosocial Function, JAMA.; 185 (1): pp94-99.

9- Bradburn, N. (1969). The structure of psychological well-being. Chicago: Aldine

10-Wood, V., Wylie, M. L., & Sheafor, B. (1969). An analysis of a short self-report measure-of life satisfaction: Correlation with rater judgments. Journal of Gerontology, 24,
465-469.

11-Neugarten, B. L., Havighurst, R. J., & Tobin, S. S. (1961). The measurement of life satisfaction. Journal of Gerontology, 16, 134-143.

12- Dhara, R., & Jogsan, A. (2013): Depression and Psychological Well-being in Old Age, J Psychol Psychother, Rajkot, India; (3): 117.

13- Kwong, E. W., Lia, C.K., & Liu, F. (2014). Quality of life in nursing home settings: Perspectives from elderly residents with frailty. Clinical Nursing Studies: 2(1): 100-110.

14-Demirkıran,F., Okyay, P., Oner, H., & Yildirim, B. (2013). Comparison of Satisfaction Levels Regarding Living Conditions, Depression and Dependency Among Two Elderly Groups, One in Nursing Home and the Other At Home: A Community-Based, Cross-Sectional Analytic Study**.** American International Journal of Social Science; 2 (2):29-37.

15-Lavanya, K., & Umadevi, L. mpact of Initialization on Geriatric Psychological Well Being, GLOBAL JOURNAL FOR RESEARCH ANALYSIS, Hyderabad, India;2015 4(12): 256.

16- Tejal, N. Psychological well-being. A study of place of residence-4 gender and age among aged people. Indian Journal of Psychology and Mental Health 2010; 4: 145-149.

17-Mughal, M.W., & Nishi, F. Psychological Well-Being and Depression Among Inhabitants of Old

Age Homes of Jaipur, Rajasthan, Indian journal of applied research2015; 6 (5):3

18-Joseph, J., Ranjith, K. R., Kaur, I., Ghai, S., & Sharma, N. Life satisfaction among inhabitants of selected old age homes at Chandigarh-Across- sectional survey. Delhi psychiatric journal; 2014;17(2): 357-361.

19- Beyaztas, F., Gökhan Kurt, G., & Bolayir, E. Life satisfaction level of elderly people: a field study in Sivas, Turkey. JPMA 2012; 62: 221-225.

20-] Pinto, J., & Neri, A. Factors associated with low life satisfaction in community dwelling elderly. Cad Saude Publica.; 2013; 29(12):2447–58.

21-Eshkoor, S. A., Hamid, T.A., & Mun, C. Y. An investigation on predictors of life satisfaction among the elderly. IJASOS- International E-Journal of Advances in Social Sciences;2015;1(2):207-212,

22- Claude, F., Guillaume, M., & Neriman, D. Psychological need satisfaction and well-being in adults aged 80 years and older living in residential homes: Using a self-determination theory perspective. Journal of Aging Studies;2014; 30:104.

23- Sancho, P., Gutierrez, M., Galiana, L., Tomas,J. M., & Oliver.A. . The assessment of Perceived Health in the Elderly: Portuguese and Spanish Validations of the Perceived Health Scale (PHS). American Journal of Psychology and Behavioral Sciences;2015; 2(3): 77-83.

24-C**ho, J., Martin, P., Margrett, J. MacDonald, M., and Poon, L.W.** The Relationship between Physical Health and Psychological Well-Being among Oldest-Old Adults. Journal of Aging Research; Volume 2011, 8 pages doi:10.4061/2011/605041.

25-Berkoz, L., & Yirmibesoglu, F. The Relationships between Living Conditions and Life Satisfaction of Elderly People in Ist anbul; 54th European Congress of the Regional Science Association in Saint Petersburg, Russia. Social and Behavioral Sciences2014

26-Choudhary, A. (2015). A Study of Life Satisfaction and Health in Old Age. International Journal of Science and Research (IJSR) 2015; 4(9):1276-1281.

27-Waldman-Levi, A., Bar-Haim Erez, A., & Katz, N. Healthy aging is reflected in well-being, participation, playfulness, and cognitive-emotional functioning. Healthy Aging Research 2015; 4:8.

28-Meléndez, J.G., Tomás, J.M., Oliver, A., and Navarro, E. Psychological and physical dimensions explaining life satisfaction among the elderly: A structural model examination. Publication History 2009; 48(3): 291–295.

Effect of Health Instructions on Anxiety Levels and Claustrophobia Among Female Adolescents Undergoing Magnetic Resonance Imaging

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Abstract

Over 80 million MRI procedures are now performed each year worldwide. Magnetic resonance imaging (MRI) is a frequently used imaging technique not only for diagnostic purposes but also in research settings. Adolescent girls report a greater number of worries, more separation anxiety, and higher levels of generalized anxiety. Claustrophobia is common during MR scanning because of the enclosed nature of cylindrical whole-body MR scanners. This study aimed to investigate the effect of health instructions on anxiety levels and claustrophobia among female adolescents undergoing Magnetic Resonance Imaging. A quasi- experimental research design was used. This study was conducted at waiting area of El Menofia University Hospital. Four tools were used to collect data; Socio-Demographic characteristic of Female Adolescents structure questioner sheet to assess knowledge related to claustrophobia Assessment sheet, and State–Trait Anxiety Inventory sheet. The majority of female adolescent had unsatisfactory knowledge in pretest regarding preparation before MRI exam as compared to post test. There was highly statistically significant difference among levels of anxiety from pre test and post test. **Conclusion;** Female adolescent who are undergoing magnetic resonance imaging examination cannot terminate the procedure due to producing anxiety and claustrophobia, so health instructions for those is very necessary, which has an effect on reducing anxiety level and claustrophobia related to magnetic resonance imaging examination. **Recommendations**; The researchers suggested conduction of a designed program for patients who cannot terminate the procedure successfully and reappointed for another examination, Patient meeting with psychologist before MRI, Establishing enjoyable posters and pamphlets into the MRI waiting room, Teach the female adolescents' methods of coping therapeutically with claustrophobia and anxiety, Presences of relative with female adolescents during preparation for MRI

Key words: **Health Instructions, anxiety levels , Claustrophobia, Magnetic Resonance Imaging**

Introduction

Magnetic resonance Imaging (MRI) has been described as the most important medical innovation in the last 25 years. There has been an enormous increase in the use of this modality in the clinical setting. Over 80 million MRI procedures are now performed each year worldwide. Magnetic resonance imaging (MRI) is a frequently used imaging technique not only for diagnostic purposes but also in research settings [(1-3).]

Magnetic resonance imaging (MRI) is known as a physiologically noninvasive technique. Individuals being scanned, sometimes experience substantial anxiety as a result of the scanning procedures or environment. During clinical scans25–37% of patients experience anxiety of moderate intensity. It has been reported that 13% of female adolescent patients undergoing MRI experience panic attacks during the procedure. The duration of an imaging sequence is about one to nine minutes and the duration of a total examination of one patient is between 20 and 90 minutes[(4, 5)]

Physicians use the MR examination to help diagnose or monitor treatment for conditions such as: tumors of the chest, abdomen or pelvis, certain types of heart problems, diseases of the liver, other abdominal organs, diseases of the small intestine, cysts, solid tumors in the kidneys and other parts of the urinary tract, tumors and other abnormalities of the reproductive organs (e.g., uterus, ovaries), endometriosis, suspected uterine congenital abnormalities in women undergoing evaluation for infertility, and breast cancer. [(6)]

Magnetic field the scanner is built so that the patients lie inside the scanner in a tunnel, approximately 2 meters long and 60 centimeters wide, with the examined organ in the centre of the tunnel. This means that the head and body will be inside the tunnel for most examinations. The average scanner is about 2 meters wide, 2 meters high and 2.5 meters long, although newer scanners may be somewhat smaller. MRI is a technique that is sensitive to motion during image data collection which may impair image quality and create so-called motion artefacts. [(7,8,9)]

Meanwhile, individual risks should be evaluated before the MRI examination such as; Aneurysm clip(s), Any metallic fragment or foreign body, Aortic stent graft, Prosthetic heart valves and annuloplasty rings, Haemodynamic monitoring and temporary pacing devices, eg, Swan–Ganz catheter, Haemodynamic support devices, Cardiac pacemaker,

Implanted cardioverter-defibrillator (ICD), defibrillator leads, Electronic implant or device, eg, insulin pump or other infusion pump, ear implants, Neurostimulation system, Shunt (spinal or intraventricular), Vascular access port and/or catheter, Joint replacement (eg, hip, knee, etc), Any type of prosthesis (eg, eye, etc), Tattoo or permanent makeup, Body piercing jewelers, Hearing aid, Renal insufficiency, Known/possible pregnancy or breast feeding. [10]

Anxiety is one of the most common psychological disorders in school-aged children and adolescents worldwide**.** Adolescent girls report a greater number of worries, more separation anxiety, and higher levels of generalized anxiety [11,12,13,14]. Anxiety in general is regarded as a common problem by radiographers. It is a multifaceted phenomenon that in the specific case of patients undergoing an MRI procedure, often involves fear of enclosed places (claustrophobia), pain, and worries about what the test might reveal. Most people have experienced anxiety at one point in life. We can distinguish two different forms of anxiety, state anxiety and trait anxiety. Trait anxiety refers to the general tendency of a person to be anxious, whereas state anxiety refers to anxiety experienced at one moment in time.[15,16]

Reducing anxiety especially for anxious female patients during MRI procedures is important for three reasons. First, it will help female patients to have a better experience with the procedure, which will in turn help them to be less anxious on potential follow-up scans. Second, the time needed to make a scan can potentially be decreased. Furthermore, when female patients are calm they tend to move less, which may decrease the amount of rescans needed because of bad image quality due to movement. [17]

Claustrophobia may be defined as anxiety in situations with confined freedom of movement. Claustrophobia is common during MR scanning because of the enclosed nature of cylindrical whole-body MR scanners. When a patient undergoes an unsuccessful MR examination, the clinical team must decide if the information can be gained from another procedure; however, in many cases, it is necessary to repeat the MR scan using sedation or general anaesthesia (GA). Frequently, it is judged that sedation will not be sufficient and the claustrophobic patient will request to be “asleep” for the procedure. [18,19]

For coping strategies , not all patients can cope with the situation and interrupt the examination prematurely due to panic attacks or claustrophobia, One will try to adapt the outcomes, by either changing the external situation (e.g. run away) or the internal situation (e.g. try to control the anxiety). Then the new situation will be reinterpret and the cycle continues. [20]

Some studies have shown that the number of children who needed sedation or anesthesia could be diminished with the adjusted preparation and/or realization of the examination. [21,.22] [23] who Suggests that increased information about the MRI scanning procedure and expected experiences during the scan may help female adolescents' to lie still during the sequences, with a decrease in motion artifacts. Furthermore, individual differences in levels of state anxiety can interact with task effects in healthy volunteers; for example, higher state anxiety was correlated with stronger insular responses to presentation of negative emotional material.

Nurse play an important role in prepares female adolescents' for scanning procedure before, during, and after the scanning. As MRI is becoming increasingly applicable and common for adults as well as for children it is important to study patients' experiences and the adjusted preparation and realization of MRI examinations. If the adjusted preparation and realization of examinations facilitates for patients undergoing an MRI then there will be a gain both for patient comfort and for efficiency in the use of resources. [24]

Significance of the study:

Clinical experience with the new technology of magnetic resonance imaging (MRI) has indicated that the procedure may produce anxiety in a number of adolescent patients, to the extent that occasionally a patient may be unwilling to undergo the procedure and adolescent child patients who are undergoing magnetic resonance imaging examination cannot terminate the procedure successfully due to producing anxiety and claustrophobia. So, this research is conducted to investigate the effectiveness of health instructions on reducing anxiety levels and claustrophobia among female adolescents' undergoing Magnetic Resonance Imaging.

Aim of the study: To investigate the effect of health instructions on anxiety levels and claustrophobia among female adolescents undergoing Magnetic Resonance Imaging.

Research Hypotheses:

Female adolescent undergoing resonance imaging who receiving health instruction

was reducing anxiety level and claustrophobia after program implementation

Materials and Method:

Research Design:

A quasi- experimental research design was used in this study.

The present study was carried out through:

Technical Design:

The technical design includes; the setting, sample, and tools used in the study.

Setting:

The study was conducted at waiting area of Magnetic Resonance Imaging outpatient unit at El Menofyia University Hospital.

Sample

A convenient sample of 50 female adolescent who attending in MRI unit appointment file at El Menofyia University Hospital 2 days/ week for a period of 10 months (from February,2012 till December , 2012) and according to the following criteria:

Female adolescent age ranged from 12 to 18 years and had no previous history of MRI examination; no concomitant invasive procedure performed on the patients.

Tools of Data Collection:

Four tools were used to collect data for the study:

It was developed by the researcher after review of the related literature. it was contain four tools

Tool I part I:-Socio-demographic Data :

This tool was designed by the researchers which includes data about the general characteristics of the study sample such as: age, and level of education, etc.

Part II-Patient Assessment Knowledge sheet: related to machine, preparation for the procedure, and contraindications for MRI.

Tool II-Claustrophobia Assessment Sheet includes:

1-Horizontal visual analogue scale of 10 cm (0-100). [25] The patient marks on the line the point that they feel represents their perception of their current state of sensation or feeling or response to be measured. Subjects respond to the (HVAS) by placing the mark through the mark through the line at position which best represent their current perception of a given phenomenon between the labeled extremes. Its most common form is 100 mm horizontal line.

2- Patient subjective symptoms of claustrophobia during the procedure.

Tool III-State–Trait Anxiety Inventory (STAI). [26]

STAI, is a self-reporting test, was used to assess state anxiety levels. It has demonstrated reliability and validity in previous studies. A valid and reliable English version of the scale was used.

Total possible anxiety scores range from 20 to 80 (higher scores indicate higher anxiety levels).

Validity of the tools were determined by five experts Menoufyia University who reviewed these instruments and judged it to measure what was intended to be measured (face validity). Experts were also asked to judge the items for their adequacy. Modifications of the tool were made according to the panel's judgment on clarity of sentences, appropriateness of content, sequence of items, and accuracy of scoring and recording of items (content validity). Reliability analysis was used to determine the extent to which the items in the questionnaire are related to each other. It was assessed by applying the tools twice on 5 female adolescents' who were excluded from the study. (Test -retest).

Fifty female adolescent interviewed individually to assess their knowledge, anxiety level and claustrophobia intensity (pretest). After that each adolescent received instructions designed by the researcher before MRI examination in addition to the routine hospital instructions. Patients examined; in this unit are on a waiting list and are given an appointment for the examination.

A booklet developed by the researchers.

The booklet was designed by the researchers after reviewing related literature to provide patients with information about the nature and sequence of the examination and about the MR imaging machine (its structure, uses and preparation). In addition, the instructions included a description and discussion of relaxation techniques, e.g. blinding, imaginative visualization and breathing techniques that might be useful to the patient in managing anxiety and claustrophobia during the examination. The booklet written in Arabic for easy understand.

Scoring system:

Questionnaire was designed to gather information about the procedure. The questions were comprised of 16 questions. Score +1 for satisfactory (50% and more score) answer, zero for unsatisfactory (less than 50% score) answer was considered

Method :

An official permission to conduct the study was obtained from the responsible authorities the director and the head of rays department of El Menofyia University Hospital. Before conducting the study, personal communication was done after explaining the aim of the study.

Ethical consideration: Oral consent was obtained from female adolescent after explanation of the aim of the study to participate in the study. Confidentiality and privacy of their information obtained from them .They had the full right to withdraw from the study**.**

The tools I,II,III of the study was developed and was tested for its content validity after thorough review of related literature by 5 experts in the pediatric nursing field.

Pilot study: A pilot study was done on a group of 5 female adolescent patients undergoing MRI from Magnetic Resonance Imaging outpatient unit at El Menofyia University Hospital. It was conducted to check the clarity of the statements, and simplicity of questions and to check the most common topics related to the study. These numbers of pilot study were excluded from the total number of study sample. Necessary corrections and modifications were done based on findings of pilot study to develop the final form of the tools.

Field Work: The field work was carried out within duration of 10 months(from (February,2011 till December, 2012), data collected (assessment phase) for 2 days per week from 9 a.m to 2 p.m, the implementation phase was done in the same days through interview with each adolescent individually using study tools. The health instructions was carried out in one session after assessment phase for each adolescent including time for discussion. All these was done through pre and post administration of an interviewing questionnaire.

Program Construction:

Program Assessment Phase:

The program was designed by the researchers based on results obtained from nursing assessment tools. It was revised and modified according to the related literature.

Program Development and Implementation Phase:

Once the official permission was granted. The researcher taking list of patients' names and medical record numbers with the schedule for patients was obtained from appointment book and individualized health instruction begins with assessment of adolescents and mutual setting of the specific objectives. Each female adolescent patient individually completed the questionnaire before they began the intervention as well as before beginning the procedure of MRI examination. The researcher provided the study group with knowledge about setting and apparatus to relieve their anxiety and claustrophobia. Female adolescent patients who could not read or write were helped by the researchers to fill out the sheet. Duration of health education session ranged from30– 45 minutes for each patient.

The implementation of Program was based on modified lectures, shared discussion, using visual aids as pictures, posters and

designed booklet that was given for each adolescent who participate in the study.

General Objectives of the Health Education Program:

The general objective of the program was to investigate the health instructions for female adolescent outpatients undergoing Magnetic Resonance Imaging on anxiety levels and claustrophobia.

Contents of Health instructions Program:

Adolescents' knowledge regarding MRI, types of apparatus, uses, risks, contraindications, questions and answers about MRI.

Preparation for patient (before, during and after procedure).

Instructions for psychological support to reduce anxiety and claustrophobia.

Program Evaluation Phase:

Evaluation was applied after program implementation by using the same pretest after the end of the sessions in order to identify differences, similarities and areas of improvement and defects.

Statistical analysis:

Data were coded for entry and analysis using SPSS statistical software package version 17. Data were presented using descriptive statistics in the form of frequencies and percentages and tested by Wilcoxon tests. Quantitative variables were presented in the form of means and standard deviations, and tested by t-test. The level of significance taken as $P < 0.05$

Results:

Table (1) shows Percent Distribution of Female Adolescent Related to Socio-demographic Characteristic, in relation to age the mean age of the female patients in the sample was (15.1200+2.10577) years, regarding to education relatively half of them (48%) finished secondary education.

Table (2) shows percent distribution of female adolescents related to knowledge about machine before magnetic resonance imaging; there was statistical significance difference of patient's knowledge after instructions. The minority of adolescent female patients (14%) had satisfactory knowledge in pretest as compared by less than three quarters (70%) of them in post test. While regarding uses of machine; the majority of them (94%) had unsatisfactory knowledge in pretest as compared by 32% of them in post test with highly statistically significant difference.

Figure (1,2,3):clarifies that 88% of adolescent patients had unsatisfactory knowledge in pretest regarding remove jewelries as a preparation before MRI exam as compared to only 4% in post test. Also, 34% of them had satisfactory pretest knowledge regarding preparation during

MRI exam compared to all of them (100%) in past test with highly statistically significant difference.

Table (4) reveals Relation between Pre Test and Post Test related to total Knowledge scores of Female Adolescents; the differences between pre test mean score 23.1600 compared to 22.3800 in post test regarding total knowledge scores for female adolescent patient with statistically significant difference.

Table (5) shows comparison between Mean & SD of total horizontal visual analogue scale of the patients in the Sample pre –post education. The mean score total fear visual analogue scale was (14.0000±1.55183),with (T=22.346, P=.000*) before education compared to (20.3400 ± 1.34938) after education with highly statistically significant difference.

Table (6) illustrates Percent distribution of female adolescent related to Subjective Symptoms of Claustrophobia during MRI examination Majority of the patients in the sample (84%,76%,66%) they had negative thoughts (afraid from MRI machine; fear of diagnostic findings; I feel fainting) respectively in pre health education, changed into positive thoughts (88%,84%,88%) respectively with highly statistically difference.

Table (7) shows Percent distribution of female adolescent related to anxiety levels after MRI examination. There is highly statistically significant difference among levels of anxiety from pre test and post test.

Table (8): illustrates Relation Between Pretest and post test of Female adolescent related to Total Anxiety Scores Before and after MRI Examination. There is highly statistically significant difference between pretest and post test in relation to total anxiety scores**.**

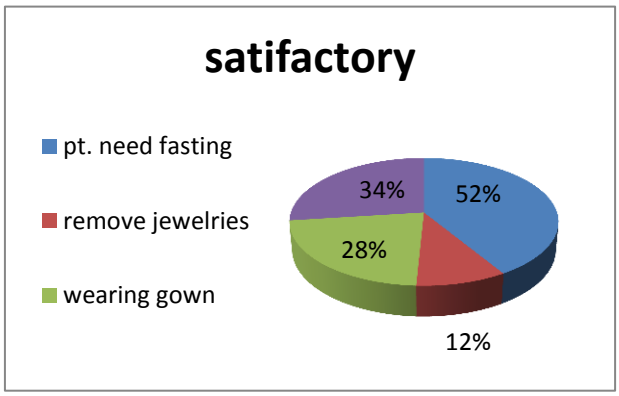
Table (9): reveals Strategies to Cope With Anxiety and Claustrophobia Before and During MRI in Percentage Distribution; There is a difference between pretest knowledge in Reading Quran 40% compared to 60 % in post test. Furthermore, there is a difference between pretest knowledge for no need to complete MRI 24% compared to 6% in posttest.

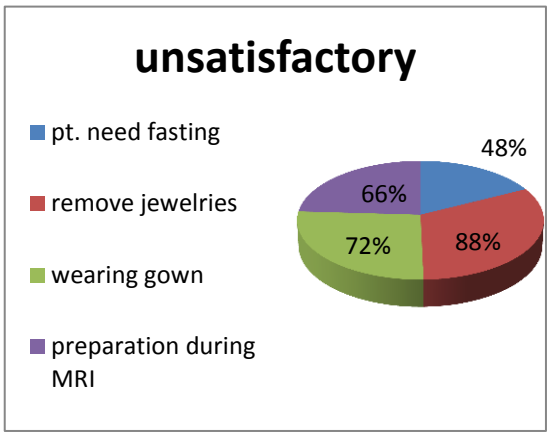
Table (1) Percent Distribution of Female Adolescent Related to Socio-demographic Characteristic

Socio-demographic Characteristic	(n=50) No	%
Age		
12- < 14 years	12	24
14< 16 years	16	32
16≤18 years	22	44
Mean+ S.D	**15.1200+2.10577**	
Educational Level		
Read and write	4	8.0
Preparatory education	22	44
Secondary education	24	48.0

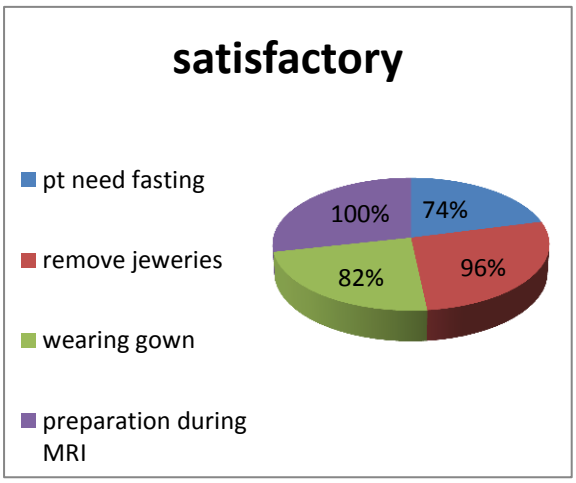
Table (2): Percent distribution of Female Adolescents related to knowledge about machine :Before Magnetic Resonance Imaging

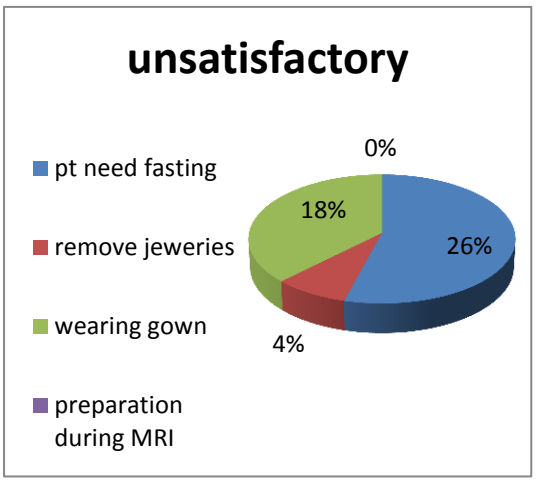
Knowledge about machine	Pre test knowledge (n=50)		Post test knowledge (n=50)		Z	P
	No	%	No	%		
Description machine						
Satisfactory	7	14	35	70		
Unsatisfactory	34	86	15	30	-4.072	.000*
Machine work						
Satisfactory	5	10	35	70		
Unsatisfactory	45	90	15	30	-4.774	.000*
Uses						
Satisfactory	3	6	34	68	-4.576	
Unsatisfactory	47	94	16	32		.000*
Duration						
Satisfactory	8	16	38	76		
Unsatisfactory	42	84	12	24	-5.145	.000*





Figure(1): Pre Test Knowledge About Machine among Female Adolescents Before Magnetic Resonance Imaging





Figure(2):Post Test Knowledge About Machine among Female Adolescents Before Magnetic Resonance Imaging

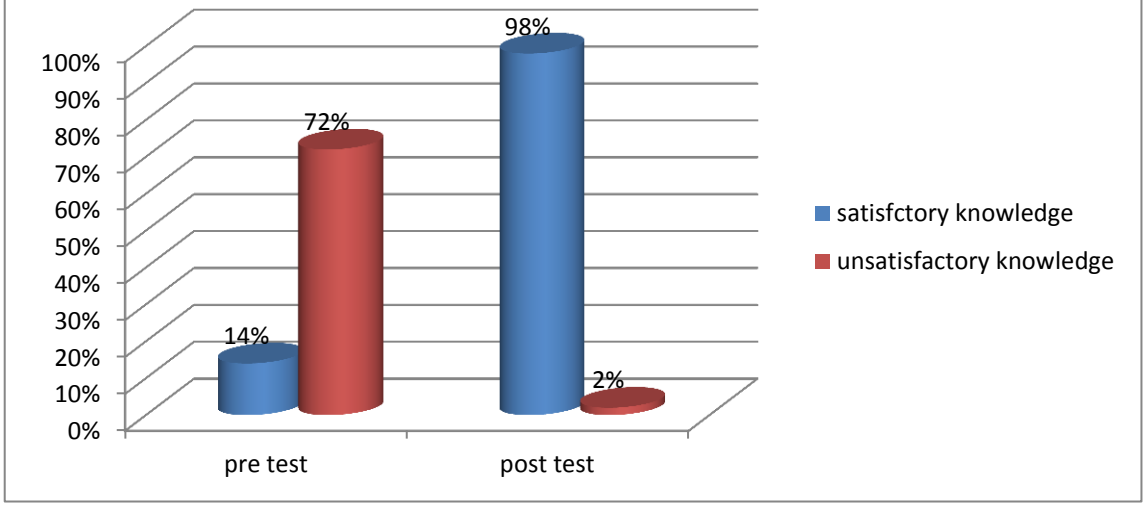


Figure (3):Differences of pre test and post test knowledge about contraindications for MRI

Table (4): Relation between Pre Test and Post Test related to total Knowledge scores of Female Adolescents

Variable	M	SD	t	P
Pre Test Total Knowledge Score	23.1600	1.79977	2.086	.042*
POST Test Total Knowledge Score	22.3800	1.86142		

Table (5): Differences between Pretest and Post Test in Relation to Total Horizontal Visual Analogue scale Scores of Claustrophobia Before And After MRI Examination

	M	SD	t	P
PRE Test	14.0000	1. 55183	22.346	.000*
POST Test	20.3400	1.34938		

Table(6): Percent distribution of Female Adolescent Related to Subjective Symptoms of Claustrophobia during MRI Examination

Variable	Pre Test knowledge (n=50)				Post Test knowledge (n=50)				Z	P
	yes		no		yes		no			
	No.	%	No.	%	No.	%	No.	%		
I am afraid from MRI machine	42	84	8	16	6	12	44	88	5.692	.000*
Fear of coming to harm at machine	34	68	16	32	9	18	41	82	4.642	.000*
Fear of diagnostic findings	38	76	12	24	8	16	42	84	5.145	.000*
I will lost my mentality	38	76	12	24	10	20	40	80	4.950	.000*

I feel isolate	**36**	**72**	**14**	**28**	**7**	**14**	**43**	**86**	**5.385**	**.000***
Fear of closed spaces	**37**	**74**	**13**	**26**	**5**	**10**	**45**	**90**	**5.357**	**.000***
I feel suffocate	**38**	**76**	**12**	**24**	**13**	**26**	**37**	**74**	**5.568**	**.000***
I afraid from restriction of movements	**33**	**66**	**17**	**34**	**5**	**10**	**45**	**90**	**3.615**	**.000***
I Want someone with me at examination room	**33**	**66**	**17**	**34**	**7**	**14**	**43**	**86**	**4.950**	**.000***
I feel fainting	**33**	**66**	**17**	**34**	**6**	**12**	**44**	**88**	**4.849**	**.000***
I am going to pass out	**6**	**12**	**44**	**88**	**44**	**88**	**6**	**12**	**5.240**	**.000***

Table (7): Percent Distribution of Female Adolescent Related to Anxiety Levels After MRI Examination

Anxiety Level	**Pre test knowledge (n=50)**		**Post test knowledge (n=50)**		**Z**	**P**
	No	**%**	**No**	**%**		
No (1 – 19)	**0**	**0**	**0**	**0**		
Mild (20 – 39)	**0**	**0**	**36**	**72**	**- 6.157-**	**.000***
Moderate (40 – 59)	**20**	**40**	**14**	**28**		
Sever (60 - 80)	**30**	**60**	**0**	**0**		

Table (8): Relation Between Pretest and post test of Female adolescent related to Total Anxiety Scores Before and after MRI Examination

	M	**SD**	**T**	**P**
Pretest Total Anxiety	**60.5800**	**4. 2237**		
Posttest Total Anxiety	**48.88800**	**4.71922**	**15.269**	**0.000***

Table (9): Strategies to Cope With Anxiety and Claustrophobia Before and During MRI in Percentage Distribution

strategies	**Pre test knowledge (n=50)**		**Post test knowledge (n=50)**	
	No	**%**	**No**	**%**
Accompanying someone with me at examination room	**9**	**18**	**5**	**10**
Reading Quran	**20**	**40**	**30**	**60**
Close my eyes	**9**	**18**	**12**	**24**
No need to complete MRI	**12**	**24**	**3**	**6**

Discussion:

Yesterday's girl is today's adolescent and tomorrow's mother. Approximately 9% (one fifth) of the world's population is in the age group of 10-19 years, as they are passing through a transitional period from childhood to adulthood, they are undergoing a lot of physical as well as psychological stress due to the changes taking place in the body. [27]

The development of MRI has been extraordinary during the last few decades and the areas of examination are growing which means that examinations. This emphasizes the importance of studying ways to improve patient care and how image quality may be improved by patient preparation. [7],[9],[28]

The study findings revealed that about half of study sample (48%) finished secondary education, and more than one third of them (44%) their age ranged between 16≤18 years. the majority of sample were having unsatisfactory knowledge related to machine, procedure preparation, contraindication , and time needed for the procedure. This may be due to low level of education (8% read and write,44% preparatory education).

Over the first 15 year period (1989–2003) of performing MRI for clinical indications observed a failure rate of approximately 3% because of patient claustrophobia. Currently, the failure rate is approximately 1.0–1.5%, with the improvement probably arising from improved magnetic design producing smaller scanners that appear less daunting for the patients.[18]

Meanwhile, a highly significant difference was found between the sample when the total horizontal visual analogue scale Scores of claustrophobia were compared after the procedure of MRI examination and after instructions were given. This may be explained by the effect of teaching patients who has anxiety and claustrophobia lowering**.** These study findings agree with [30] who concluded that, State anxiety of all subjects reached the highest score and level at the time just before cardiac catheterization and before education intervention and the lowest score and level recorded at the time following the procedure. Furthermore, a lower level of anxiety was experienced by the experimental subjects who received the education intervention.

In agreement with the study findings, [31] reported that 13% of patients undergoing MRI experience panic attacks during the procedure ,the MRI procedure alone could lead not only to the triggering of preexisting claustrophobia but also to the onset of claustrophobia itself: there is

some very limited evidence to suggest that, in some patients, claustrophobia may be initially provoked by the experience of being in the scanner. Also, [8] found that Between 1% and 15% of all patients scheduled for MR imaging suffer from claustrophobia and cannot be imaged, or they require sedation to complete the scan.

In relation to completion of magnetic resonance imaging, it is obvious that, all of study group subjects completed the procedure successfully. This may be explained by the effect of knowledge which introduced for the patients that has on anxiety and claustrophobia lowering. also, this is the first experience for all patients to be in the MRI machine which itself can be a main source of claustrophobia and anxiety

The discrepancy between the number of people reporting anxiety and the number of prematurely terminated scans suggests that many "completers" still experience substantial anxiety. MRI-related anxiety is likely caused by the novelty of the experience, the confined and noisy space within the scanner, fear of suffocation or that the scanner will be harmful, and concern about anticipated findings.[32]

Concerning the severity of anxiety level, this study revealed that a highly significant difference was found immediately after the procedure. Majority of the patients in the sample (60%,40%) experienced moderate to severe state anxiety levels pre-intervention. In contrast,(72%)of the patient experienced a severe level of anxiety post-intervention.

These findings agree with, [25] who indicated that the study group experienced mild to moderate anxiety levels, while, around two-thirds of the control group exhibited moderate to severe anxiety after examination. Amount of anxiety experienced by the patients during the scan may be related to various factors as reported by [34] who stated in their study that "amount of anxiety experienced during the scan was related to the perceived amount of time spent having physical symptoms of panic(45- 60 min.).

Study findings showed that, the majority of both groups were reading Quran as a strategy to cope with anxiety and claustrophobia before and during MR imaging. This may be explained that they are Muslims and all of us think that the cure is in Quran as our God said.

These results were in agreement with [25] who reported in her study that as within Egyptian culture many people believe that they can become sick if God decides to test their faith. This is also illustrated from what was said during data collection, when

most patients gave thanks to God and continued thanking God because acceptance of illness may be rewarded by its relief. Thus, a person's faith, religion and spiritual beliefs can help calm emotions and reactions to stressors, and can be a vital support in times of medical crises.

Other study reported that One-session treatment of cognitive therapy for specific phobias has been found to be highly effective, and those patients with preexisting claustrophobia may benefit from one-session treatment, This intervention was based on the factors found to be most associated with anxiety in the scanner and the strategies commonly used to combat it, and the most strategies they used were a very simple breathing exercise they taught. **(33)**

Conclusion:

Female adolescent who undergoing magnetic resonance imaging examination cannot terminate the procedure due to producing anxiety and claustrophobia, so health instructions for those is very necessary, which has an effect on lowering anxiety and claustrophobia related to magnetic resonance imaging examination.

Recommendations:

The researchers suggested conduction of a designed program for patients who cannot terminate the procedure successfully and reappointed for another examination.

Patient meeting with psychologist before MRI.

Establishing enjoyable posters and pamphlets into the MRI waiting room.

Teach the female adolescents' methods of coping therapeutically with claustrophobia and anxiety.

Presences of relative with female adolescents during preparation for MRI.

Create methods of communications with staff nursing during MRI.

Further studies must be conducted in this field on larger sample size for both genders to identify the other factors related to producing anxiety and claustrophobia.

References:

- Robinson M, Peake L, Ditchfield M. Magnetic Resonance Imaging Findings in a Population-Based Cohort of Children with Cerebral Palsy. Dev Med Child Neurol 2009; 5 :(1) 39-45.
- Hermann B, Dabbs K, Becker T. Brain Development In Children With New Onset Epilepsy: A Prospective Controlled Cohort Investigation. Epilepsies, 2010. Available at :doi:10.1111/j.15281167.2010.02563
- Enders J, Zimmermann E, Rief M, Martus P, Klingebiel, Asbach R,

Klessen C, Diederichs G, Bengner T, Teichgräber, Hamm UB and Dewey M. Reduction Of Claustrophobia During Magnetic Resonance Imaging: Methods And Design Of The "CLAUSTRO" Randomized Controlled Trial. BMC Medical Imaging 2011; 11:4 doi:10.1186/1471-2342.

- MacIsaac HK, Thordarson DS, Shafran R, Rachman S, Poole G. Claustrophobia And The Magnetic Resonance Imaging Procedure. Journal of Behavioural Medicine,1998; 21(1):255–268.
- Törnqvist E. Going Through Magnetic Resonance Imaging Patients' Experiences And The Value Of Information And Preparation For Adults And Children. Lund University, Sweden, Department of Health Sciences, Lund University, Lund, Sweden 2010.
- Radiological Society of North America. Safety-MR. Retrieved July 9; from http://www.radiologyinfo.org/en/info.cfm?pg=bodymr 2012
- Westbrook C, Kaut Roth C, & Talbot J. MRI in Practice, 3 ed.. Oxford: John Wiley and Sons2005, 34 – 5.
- Dewey M, Schink T, Dewey C. Claustrophobia During Magnetic Resonance Imaging: Cohort Study in Over 55,000 Patients. J Magnet Reson Imag 2007; 26 (1):1322-27.
- McRobbie D, Moore E, Graves M , & Prince, M. Magnetic Resonance Imaging from Picture to Proton 2 ed. Cambridge: Cambridge University Press Co., 2007.
- Dill T. Contraindications To Magnetic Resonance Imaging Heart 2008; 94:943–948. doi:10.1136/hrt.2007.125039
- Poulton R, Milne BJ, Craske MG, & Menzies RG. A Longitudinal Study Of The Etiology Of Separation Anxiety. Behaviour Research and Therapy 2001; 39(12): 1395-1410.
- Weiss D, & Last C. Developmental Variations In The Prevalence And Manifestations Of Anxiety Disorders. The Developmental Psychopathology Of Anxiety Oxford: Oxford University Co., 2001; 27-42.
- Costello E, Egger H & Angold A. Developmental Epidemiology of Anxiety Disorders. In T. H. Ollendick & J. S. March , Phobic Anxiety Disorders In Children And Adolescents: A Clinician's Guide To Effective Psychosocial And Pharmacological Interventions

Oxford, UK: Oxford University Press.2003;61-91.

- Costello E, Mustillo S, Erkanli A, Keeler G & Angold A. Prevalence And Development Of Psychiatric Disorders In Childhood And Adolescence. Arch Gen Psychiatry 2003; 60(1): 837-844.
- Tischler V, Calton T, Williams M, Cheetham A. Patient Anxiety In Magnetic Resonance Imaging Centres: Is Further Intervention Needed? Radiography 2008; 14(3):265-266.
- Zeidner M, & Matthews G. Anxiety 101. New York: Springer Publishing Co., 2011;1–40.
- Bigley J, Griffiths P, Prydderch A, Romanowski C , Miles L, Lidiard H, and Hoggard N Neurolinguistic Programming Used To Reduce The Need For Anaesthesia In Claustrophobic Patients Undergoing MRI. Br J Radiol. February 2010; 83(986): 113–117. doi: 10.1259/bjr/14421796
- Ottosson, J-O. (2009). Psykiatri. (7:e uppl.) Stockholm: Liber. 400 s. (Alt 8:e utgåvan.)
- Eshed I, Althoff C, Hamm B, & Hermann. Claustrophobia And Premature Termination Of Magnetic Resonance Imaging Examinations. J Magn Reson Imaging 2007; 26(2): 401-404.
- Harned RK, 2nd, & Strain J. MRI-Compatible Audio/Visual System: Impact On Pediatric Sedation. Pediatr Radiol 2001; 31(4): 247-250.
- Hallowell L , Stewart S , Amorim E & Ditchfield M .Reviewing The Process Of Preparing Children For MRI. Pediatr Radiol2008; 38(3): 271-279.
- Tornqvist E, Mansson A, Larsson EM, Hallstrom I. It's Like Being In Another World — Patients' Lived Experiences Of Magnetic Resonance Imaging. J Clin Nurs2006; 15 (1) : 954–961.
- Meriau K, Wartenburger I, Kazzer P, Prehn K, Villringer A, van der Meer E, Heekeren HR. Insular Activity During Passive Viewing Of Aversive Stimulire"Ects Individual Differences In State Negative Effect. Brain And Cognition2009; 69:73–80.
- Selim M. Effect Of Pre-Instruction On Anxiety Levels Of Patients Undergoing Magnetic Resonance Imaging Examination. East Mediterr Health J2001; 7(3): 519- 525.
- Gould, D., 2001 Blackwell Science Ltd, Journal of Clinical Nursing, 10, 697-706

- Spielberger C, Gorsuch R, Lushene R. State–Trait Anxiety Inventory. Palo Alto, Consulting Psychologist Press 1983.
- Eswi A, Helal H, and Elarousy W. Menstrual Attitude and Knowledge among Egyptian Female Adolescents Journal of American Science2012;8(6): 555-565
- Chandromohan D, Parikh S, Akhtar N, & Delgado P .Review and update of MRI for Clinicians. Mo Med2005; 102(2):120-123.
- Chan D, Cheung H. The Effects Of Education On Anxiety Among Chinese Patients With Heart Disease Undergoing Cardiac Catheterization in Hong Kong 2003.
- Harris S and Menzies R. Predicting anxiety in Magnetic Resonance Imaging Scans. Int J Behav Med 2004; 11 : 17.
- McGlynn F, Smitherman T, Hammel J, Lazarte A: Component Fears Of Claustrophobia Associated With Mock Magnetic Resonance Imaging. Journal Of Anxiety Disorders; 2007;21(1): 367–380.
- Thorpe S, Salkovskis, PM, Dittner A.Claustrophobia in MRI: The Role Of Cognitions. Magnetic Resonance Imaging 2008; 26: 1081–1088.
- Street RL, Gorgon H , and Haidet P. Physicians' Communication And Perceptions Of Patients: Is It How They Look, How They Talk, Or Is It Just The Doctor? Soc Sci Med2007; 65: 586–59.

Patients and Nurses' Opinion about uses of physical restraint for psychiatric patients in Mental Health Hospital

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Abstract

Physical restraint is any manual method or mechanical device attached to the patient's body that restricts freedom of movement and cannot be easily removed. Despite extensive literature on the potential complications of using physical restraint, it is still considered as a permanent and effective intervention in the management of unpleasant behaviors. **This study aimed to** assess patients' and nurses' opinion about uses of physical restraint on psychiatric patients in Mental Health Hospital. **Study was conducted in** Tanta Mental Health Hospital which is affiliated to Ministry of Health. **The study subjects** include 49 psychiatric patient and all nurses working in Tanta Mental Health Hospital (80 nurses). **Two tools** were developed by the researcher to collect the necessary data. **Tool (1) was** Patient Structured Interview questionnaire, and **Tool (2)** was nurses structured Interview questionnaire. **The main results** revealed that a round one third of studied patients had negative opinions about use of physical restraint, and nearly half of them were average. In another hand more than half of studied nurses had positive opinion and nearly to one third were average regarding to using of physical restraints, **so it was recommended that** nurses should be involved in educational program about; therapeutic use of self and effective communication skills to improve their interaction with patient and encourage them to express gradually about their strong feeling, and educated about aggressive behaviors, it's dynamic and predisposing factors, and how applied physical restraints effectively with patients and debriefing following these procedure to minimize a negative effects on patients.

Introduction:

Physical restraint is any manual method or mechanical device attached to the patient's body that restricts freedom of movement and cannot be easily removed [1]. It is considered one of the earliest mean used to cope with people who are unable to control their behavior [2]. Despite extensive literature on the potential complications of using physical restraint, it is still considered as a permanent and effective intervention in the management of unpleasant behaviors on acute and long term care [3].

One of the strongest justification for the use of physical restraints in hospital are usually for the protection of patients and others when medication and verbal therapies are insufficient to control potentially violent patients [4]. Restrain means to place patient under control when necessary to prevent serious body harm to the patient or to another person[5].Despite physical restraint on psychiatric inpatient unite remains a highly controversial ethical issue, literature estimated that more than 20% of young and adult psychiatric patients are physically restrained at some point during their stay in the hospital [6]. In all circumstances, the least restrictive restraints should be used and restraints should never be used for the sake or convenience. In saying this, it is imperative that nurse must be understand and follow proper protocol and procedure when restraining a patients to ensure safety and dignity of the patient [7,8].

There are several types of medical products that have been used to physically restraint patient's movement. Some of them are waist, vest, wrist or leg restraints, hand mitts, chairs with table tops, full side rails, net beds or enclosed beds, freedom' elbow splints, or tucking a patient's sheets so tightly that the patient cannot move, or tranquilizer chairs, strait jackets [9].

Protection bed was another physical restraint it was a narrow bed, just wide enough to accommodate a person of average weight, with a lid that could be fastened to confine the patient while Blanket sheets restraint is used to restraint the whole body [10]. A more human form of physical restraint was straight waist- coast that evolved into a shaped like a jacket with overlong sleeves, the ends of these sleeves can be tied to the back of the wearer, so their arms are kept close to their chest with possibility of only little movement. Limb restraint was considered one of the types of mechanical restraint commonly used. It's either soft or leather band fastened around the ankle or leg (ankle) or around wrist or arm (wristlet) [11].

Physical restraints were described as "high-risk interventions with fatal consequences if applied incorrectly. One of the most dangerous moments of restrained patient is during the take down. A take down refers to when a patient is raced down and immobilized for application of a restraint. It is quick period that patient can sustained serious injury and even death. Some studies found that the largest percentage of patient assaults by staff members during restraint incidents and another documented that most staff injuries are sustained when staff are trying to control patient violence [(12)].

Restraint method can have considerable harmful psychological effect on both patients and nurse. It can affect the relationship between patient and staff member, and changes the ability of nurses to preserve and interact with the patient as an individual. There is a risk of patients being a status of objects, and to be controlled regardless of their individual needs [(13)].The patients who physically restrained experienced fear, demoralization, anger, resistance, powerlessness, punished, and denial. In addition to attempting to restraint may be frightening patients and increase the feeling of fear, which can be result in angry or combative behavior as well as lose of dignity and withdrawal [(14)].

Nursing staff may have some emotional reaction felt while doing restraint procedure, include anxiety, anger, feeling bored or distressed, crying, inadequacy, hopelessness, frustration, fear, guilt, dissatisfaction. In another line the restraint incidents had reawakened distressing memories of pervious traumatic events to staff members, although this method is not to the satisfaction of neither patients nor nurses, nurses are inevitably forced to use it. [(15)]

The studies show that a wide variance exists in the frequency of this intervention is used, from one health care setting to another. One significant factor in this variance may be the opinion and experience of nurses toward its use [(16)]. ***Scherer (1991)*** emphasize the important of providing nurses the opportunity to reflect their feeling, and opinion about uses of physical restrain on patients. Such as opportunity for discussion of their concern, contribute to the improvement the quality of care that provided to restrained patients [(17)].

Nurses are often on the front line of interacting with patients who may be violent or who display disruptive

behaviors, some studies show that nurses may considered a physical restraint as acceptable mean of managing the destructive behavior of seriously disturbed patient [18],or nurses feel pressured to demonstrate physical restraint as a result of feeling of anger and frustration, when their clients do not conform to their instructions, the restraints tended to occur as a result of conflict and power struggles; inflexibility, lack of negotiation skills, or an inability or unwillingness to attempt to understand patients, on the part of the staff members, and did not occur as a result of emergency situations [19] .

Despite understanding of patients, and nurses perspectives are considered important in decision making toward use physical restraints and evaluate its' effective, little researches have been conducted this aspect in using of physical restraint [20]. The process of physical restraint continues even after the restraint of the patient. It includes nursing care, to ensure prevention of patient damage, interaction with the patient for the commitment and release of restraint and also explaining to the patient reasons or need to restrain him/her. Thus it is important to determine nurses and patients' opinion toward physical restraints [21].

Aim of the study

The aim of the study was to assess psychiatric patients and nurses' opinion about use of physical restraint on psychiatric patients in Mental Health Hospital.

Research questions

What are the opinion of psychiatric patients and nurses about uses of physical restraint on psychiatric patients in Mental Health Hospital?

Materials and Method

Materials

Research design:-

The present study follows a descriptive research design.

Setting:-

The study was conducted at Tanta Mental Health Hospital. Affiliated to Ministry of Health with capacity of (107) beds, divided in to four wards. Two ward for male (67bed) and two wards for female (40bed) This hospital serves three governorates, namely; Gharbeya , Menofeya ,and Kafr –El-sheikh .

Subjects:-

The study was selected from the previously mentioned setting and divided in two groups:-

Group one: - It was consisting of 49 psychiatric patients either male or female

depended on power analysis equation (with power of test (90%) and significant level (alpha = 0.05).The subjects of the study were fulfilling the following inclusion criteria:-

- Able to communicate.
-Willing to participate in the study.
- Have previous experience with physical restraint
-Duration of mental illness more than 6 months.

Group two: - all nurses working at Mental Health Hospitals (80 nurses) and fulfilling the following inclusion criteria:-

-Willing to participate in the study.
-Working experience at Mental Health Hospitals more than 2 years
-Provide direct care to psychiatric patient.

Tools of the study:-

The data of the study was collected using the following tools:

Tool (I): Patient Structured Interview questionnaire .It was developed by the researcher after review of literature to assess opinion of psychiatric patients about uses of physical restraint [22-25]. It consisted of two parts:-

Part one: - included items related to socio demographic characteristic of psychiatric patient, it included: age, sex, marital status, occupation, educational level, and clinical data such as: - duration of illness, numbers of hospitalization, and duration of current hospitalization.

Part two: - Patient Structured interview questionnaire**.**

This tool consisted of 26 items which measure patient's opinion regarding the experience of being restrained, the effectiveness of restraint, and the ways that patient dealing with being restrained.

In this tool there consisted of 9 positive statements (15,16,17,18,2o,21,22,25,26) and the rest statements are negative . Each statement was rated on a three point likert scale on which 1 = agree, 2 = undecided and 3 = disagree (The total score ranging from 26 to 78 grade (good are >75 %, fair are 50-75 %, bad are < 50 %). The higher score was mean more positive opinion of psychiatric patient about use of physical restraint.

Tool (II): Nurses structured Interview questionnaire. It was develop by the researcher after review of literature to assess opinion of psychiatric nurses about uses of physical restraint for psychiatric patient [15,23,26]. It consisted of two parts:-

Part one: it included socio- demographic characteristics and clinical experience of nurses such as:- sex, age, marital status , level of education, and years of experience in psychiatric nursing filed, previous

training periods , and reason for not attending in any training period.

Part two: - Nurses Structured Interview questionnaire to assess opinion of psychiatric nurses about uses of physical restraint.

This part consisted of 28 items the eleven items were positive statements (1,2,3,11 ,17,19,20,24,25,27,28) and the rest items were negative. Each statement was rated on a three point likert scale on which 1 = agree, 2 = undecided and 3 = disagree. The total score was ranging from28 to 84 grade (good are >75 %, fair are 50-75 %, bad are < 50 %). The higher score was a more positive opinion of psychiatric nurses toward uses of physical restraint on psychiatric patient.

Method

A written official letters from the Faculty of Nursing, Tanta University was directed to the director of Tanta Mental Health Hospital that is affiliated to Ministry of Health to take their permission for collected data. The director was informed about the goal of the study, data and time of data collection. All tools were translated into Arabic language by the researcher and were tested for translation. All tools were tested for internal validity by a jury composed of five experts in psychiatric nursing fields. The required modifications were done accordingly.

Ethical Consideration;

- Ethical written consent will be obtained from studied nurses and patients after explaining the purpose of the study.
- The subjects were informed about the goal of the study, date and time of data collection.
- Informing studied subjects about confidentiality and privacy of any information was obtained.
- Respecting the right of the studied subjects to be withdrawal at any time during data collection.

Pilot study:-

-A pilot study was carried out on five of psychiatric patients and eight nurses from Tanta Mental Health Hospital that is affiliated to Ministry of Health to ascertain the clarity, applicability and feasibility of the study tools. In addition, estimate the approximate time required for interviewing the studied subjects as well as identifying obstacles that might be faced during data collection. These subject were excluded later from the study sample. Necessary modification was done based on the finding of this pilot study.

Actual Study

-The actual study involved 49 psychiatric

patients were selected randomly and all nurses (80 nurses) who were working at previous setting.

-The data was collected through interview with each studied subject individually to assess his or her opinion toward use of physical restraint.

-The interview with studied nurse lasted for 10-20 minute, and interview with the studied patient lasted for about 20-30 minute according to their level of attention, understanding and cooperation.

-Data were collected over a period of four months starting from October 2015 and ending in January 2016.

Statistical analysis;

The collected data were organized, tabulated and statistically analyzed using SPSS version 19 (Statistical Package for Social Studies). Data were presented numbers and percentage. The range mean and standard deviations were calculated. Chi – square test was used to compare between more than two variables. Person's correlation coefficient test used to determine association between variables in the same group. The level of statically significant was adapted at $P \leq 0.05$.

Table (1):-Distribution of studied patients according to socio demographic characteristics and clinical data (no=49).

Socio demographic characteristics	(n=49) No	%
Gender		
Males	26	53.1
Females	23	46.9
Age :		
>20	3	6.1
20- < 30	19	38.8
30- < 40	18	36.7
40-50	9	18.4
Range	18-50	
Mean ±SD	30.76±8.65	
Marital status:		
Single	16	32.7
Married	30	61.2
Divorced	1	2.0
Widowed	2	4.1
Educational level:		
Illiterate	4	8.2
Read & write	8	16.3
Primary	13	26.5
Secondary	19	38.8
University graduate	5	10.2
Job:		
Employed	31	63.3
Not employed	18	36.7
Duration of mental illness:		
<10	16	32.6
10-	16	32.6
15-	7	14.3
20-30	10	20.5
Range	2-30	
Mean ±SD	12.41±6.34	
Median	12	
Number of hospitalization:		
5-	7	14.3
10-	10	20.4
15-	9	18.4
20-	9	18.4
≤ 25	14	28.5
Range	5-55	
Mean ±SD	20.84±12.14	
Median	19	
Duration of current hospitalization		
Range of month	1-10	
Mean ±SD	4.86±3.0	

Table (1) clarifies distribution of patients according to their socio-demographic characteristics and clinical data. Regarding to gender, the more than half of sample (53.1%) was male, while (46.9%) were female. As for age, 38.8% of studied patient aged from 20 to > 30 old year and (36.7%) of them ranged from 30 – to > 40, with a mean 30.76±8.65. More than half of studies patient were married (61.2%), and 32.71% were single. In addition to the studied patients have different level of education with different present age, 38.8% of them have secondary level of education, 26.5% have primary level, 16.3% were read & write, 10.2% have graduate level, and only 8.2% of studied patients were illiterate. The more than half of studies patients (63.3%) were employed. In regarding to clinical data, more than half of studies patient have duration of illness less than 15 years, with mean 12.41±6.34, and the mean of their number of hospitalization were 20.84±12.14. In addition to the mean of their duration in current hospitalization was 4.86±3.0.

Table (2): Distribution of studied nurses according to socio-demographic characteristics (n=80).

Socio demographic characteristics	(n=80) No	%
Sex:		
Male	34	42.5
Female	46	57.5
Age :		
20- < 30	37	46.2
30- < 40	33	41.3
40-50	10	12.5
Range	21-50	
Mean ±SD	31.09±6.91	
Marital status:		
Single	11	13.8
Married	53	66.3
Divorced	12	15.0
Widow	4	5.0
Educational level:		
Diploma	26	32.5
Graduate from institute of nursing	30	37.5
Bachelor	21	26.3
Master degree	3	3.8
Years of experience in psychiatric nursing :		
<5	21	26.3
5-	32	40.0
10-	10	12.5

15-	9	11.2
≥ 20	8	10.0
Range	1-25	
Mean ±SD	8.70±6.03	
Median	7.00	
Previous training period:		
Nurses have training	16	20.0
Nurses have not any training	64	80.0
Reasons for not attending training:		
No training by the hospital	14	17.5
No previous advertisement before training	8	10.0
Have no time to attend training	7	8.8
High cost of training sessions	6	7.5
Have no desire to attend training	2	2.5
Not need training	11	13.8

The item" reason for not attending nurses training" is not mutually explosive

Table (2) clarifies distribution of nurses according to their socio demographic characteristics. Regarding to, gender the more than half of subjects (57.5%) were female, while 42.5% were male. As for age 46.2% of studied nurses aged from 20 to > 30 old year, and 41.3% aged from 30- > 40 with mean 31.09 ±6.91. The more than half of studied nurse (66.3%) were married, (15%) were divorced and (13.8%) were single. In addition to the studied nurses have different level of education with different percentage, 37.5% of them graduate from institute of nursing, 32.5% have diploma, 26.3% have bachelor, and only 3.8% have master degree. In regarding to experiences in psychiatric nursing, 26.3% of the studied nurses had experience less than five years, 40% had experiences from five to ten years, with a mean 8.70±6.03 years and the median was 7 years. A majority of studies nurses (80.0%) have not previous training periods of psychiatric nursing. Regarding reason for not attending training, it was clear that a various reasons such as 17.5 % of nurses said that the hospital do not provide any training course, 13.8% reported that there is no need for attend these sessions. 10% of studied nurses answered by the hospital do not advertise about training courses, and (8.8%) of nurses insisted that there is not enough time to attend such courses, 7.5% was reported that high cost of training courses, and 2.5% of studied nurses reported that there is no desire for them to attend these training sessions.

Table (3):- Distribution of studied nurses and patients regarding to their opinions about use of physical restraint.

Physical restraint	Negative (<50%)		Average (50-75%)		Positive (>75%)	
	No	%	No	%	No	%
Patients' opinion(n=49)	18	36.7	23	47.0	8	16.3
Nurses' opinion(n=80)	0	0.0	27	33.8	53	66.2

Table (3) shows distribution of studied nurses and patients regarding to their opinions about use of physical restraint. It was clear that 36.7% of studied patients had negative opinions about use of physical restraint compared with none of studied nurses, and 16.3% of studied patients had positive opinions compared with 66.2% of studied nurses, while 47% of studied patients reported average and also 33.8% of studied nurses have a same opinion

Table (4): Relation between socio- demographic characteristics of studied patients and their opinion toward physical restraint

Socio- demographic Characteristics	Patient opinion toward physical restraint						P
	Negative (< 50%)		Average (50-75%)		Positive (>75%)		
	No	%	No	%	No	%	
Gender:							0.837
Male	11	42.3	11	42.3	4	15.4	
Female	7	30.4	12	52.2	4	17.4	
Age :							0.367
<30	12	44.4	10	37.0	5	18.3	
≥30	6	23.7	13	59.1	3	13.6	
Marital status:							
Currently not married	7	36.8	9	47.4	3	15.8	
Currently married	11	36.7	14	46.7	5	16.7	
Job:							0.898
Employed	10	32.3	16	51.6	5	16.1	
Not employed	8	44.4	7	38.9	3	16.7	
Educational level:-							0.001*
-Less than secondary	6	24.0	11	44.0	8	32.0	
-Secondary or more	12	50.0	12	50.0	0	0.0	

*Statically Significant at ≥ 0.05

Table (4) clarifies the relation between socio- demographic characteristics of patients and their opinion toward physical restrain. There were not statically significant relation between the opinion of studied patient and their gender, age, marital status, and their job, but there was a statically significant relation with their level of educational level (P = 0.001).

Table (5): Relation between socio-demographic characteristics of studied nurses and their opinions toward physical restraint (No = 80)

Variables	Average		Positive		X^2	P
	No	%	No	%		
Age :					6.772	0.009*
<30	7	18.9	30	81.1		
≥30	20	46.5	23	53.5		
Gender:					0.498	0.481
Male	10	29.4	20	70.6		
Female	17	37.0	29	63.3		
Marital status:					1.116	0.291
Currently not married	7	25.9	20	74.1		
Currently married	20	37.7	33	62.3		
Educational level:					1.082	0.582
Diploma	8	26.7	22	73.3		
Graduate from institute of nursing	10	38.5	16	61.5		
Bachelor	9	37.5	15	62.5		
Years of experiences in psychiatric field:					6.227	0.038*
<5	7	21.9	25	78.1		
5-	6	28.6	15	71.4		
≥10	14	51.9	13	48.1		
Previous training:					2.362	0.124
Nurses have training	8	50.0	8	50.0		
Nurses have not any training periods	19	29.7	45	70.3		

*Statistically Significant at ≥ 0.05

Table (5) Shows relation between socio-demographic characteristics of nurses and their opinions toward physical restrain. It was found that a statistically significant relation between nurses opinion toward physical restraint, and their age, and years of experiences in psychiatric field " X^2 =6.772 , P = 0.009 , " X^2 = 6. 227, P = 0.038 respectively"

Table (5): Correlation between studied patients' opinion toward physical restraint and their socio demographic characteristics

Items	Total physical restrain opinion score	
	R	P
Age in years	0.074	0.613
Duration of mental illness	0.215	0.137
Number of hospitalization	-0.021	0.887
Duration of current hospitalization	-0.060	0.683
Educational level	-0.377	0.007*

*Statistically significant at ≥ 0.05

Table (5): Show that relation between studied patients socio demographic characteristics and their opinion toward physical restraint**.** It was found that negative relation between positive opinion of patients toward physical restraint and their educational level (r = -0.377& p = 0.007)

Table (6): Correlation between the studied nurses' opinion toward physical restraint and their socio demographic characteristics.

Items	Total physical restrain opinion score	
	R	P
Age in years	-0.234	0.036*
Years of experiences in psychiatric field	-0.197	0.079
Educational level	0.080	0.480

*Statistically significant at ≥ 0.05

Table (6) appears that correlation between nurses' opinion toward restraint and their socio demographic characteristics. It was found that negative correlation between positive opinion of nurses toward physical restraint and their age (p = 0.036 & r = -0.234).

Discussion

Physical restraint is being used as a protective intervention in psychiatric setting to reduce risks posed by violent patients and to prevent patients from harming themselves and others, **Fisher(1994)** found that, restraint has deleterious psychological effect on patients and staff [27] Consequently, according to **Steel(1993)**,this effect can influence therapeutic alliance between patient and staff, if staff members are prevented from dealing with intense feeling, such as those which may result from the use of physical restraint. It can influence their interaction, reaction and perception about procedure, and their choice for restraint as intervention. Facing staff opinion and reaction toward physical restraint, will help them involvement in philosophy of using less restrictive intervention [28].

Moreover, explore patient's opinion about the experience of being restrained, is very helpful. Patient who have been restrained constitute the only source of information regarding how restraint is experienced; Such patients can provide valuable information, that may complement observational data and information from staff, as to why restraint is used, whether it could have been avoided, and its outcome [29,30].

Some studies have examined patients and nurses opinion concerning physical restraint. They indicated that, patients have negative opinion toward restraint. However, nurses have positive opinion toward applying physical restraint especially on aggressive patient [31-34]. The present study indicates that more than one third of studied patients had negative opinion about physical restraint and around half of them in border line between positive and negative opinion. The most of studied patients described physical restraint during interview as lose of freedom, punishment, humiliated and made them disable, they didn't accepted physical restraint as a way of treatment. This supported by the study of **Kesk-Valkama A(2010)** who found that many of studied patients reported physical restraint a negative intervention and a form of retribution[35] .

In this respect the result of the previous studies concluded that the patient who physically restrained had predominantly negative feelings such as anger, frustrated, fear, discomfort, resentment, and being not accepted or rejected.[r] In addition to feeling of helplessness, depressed or

mixed confusion emotion as well as feeling of loneliness.[31-34]

In the same line, **Meehan. T et al (2002)** stated that physical restraints released patients a negative thought toward staff [36].**Mohr (1998)** reported that patients were empathetic for patients being restrained.[37] Moreover, **Frueh et al (2005)** who added that, restraint is considered as one of the most reported life trauma that occurred within psychiatric setting as identified by patients [38]. This is also consistent with **Roger (1959)**, who stated that the factor that necessary for patients' therapeutic improvement, is to perceive the helper as being unconditionally accepting their condition [39], while the role of physicians and nurses in present study was frequent use of restrictive and often distressing intervention as physical restraint. This goes with **Tong Chien. T et al (2004)**, who found that the most violent psychiatric patients wished that the staff would have been more receptive to their need [40].

In contrast, the study of **wynn R (2004)** who indicated that some patients reported they calmed down after having been restrained [41]. While, **Roachs (2001) who** stated that restraining agitated, confused, or combative patients tend to increase behavior problem rather than calm and sooth the patients. This is explained by the fact that, a natural human reaction is resist act such as restrict movement [42].

Regarding to nurses' opinion toward use of physical restraint, the present study indicates that, the more than half of studied nurses had positive opinion and around third in borderline, they stated that the restraints were benefits for patients, applied to protected nurses and others, its right way to control aggression, and they also satisfied about themselves when used physical restraints.

In the same line, **Frost .S & Wells . D (2000)**, and **Huckshorn KA (2004) who** found from their studies, the nurses described restraints as a best method to manage potential harm, and it's arising from a situation in which patients and others persons in unite [43,44] .In this respect **Mohamed. N. F (2007)** who found from his study that both physicians and nurses rationalized the use of restraint with situations where patients are dangerous to themselves or others. Noticeably, the staff was restraining patients not only in case of excitement, but also in case of aggressive behavior, while patients were still not reaching the stage of losing control. Despite ,the fact that the situations

sometimes required other alternatives than restraint [45].

However, **Chuang YH (2006)** elicited that the most nurses in his study expressed some a struggle between patients' autonomy and their practice of care [46]**.** In another hand**, Hantikainen .V** and **Kappeli.S (2000)**, and **Lee.S et al.,(2003)** who reported that their studied nurses view restraint was a necessary part of their job but it had positive and negative aspects. [47,48]

Moreover **Mohamed N. F (2007)** stated that the majority of nurses opinion was physical restraint enforces patients to obey order, this may be due to the distance and the fear provoked by the relationship between the patients and staff [45] .This is agreement with the finding of **Abdel Dayem (1991)**, who found that the majority of nurses opinion was physical restraint helped patients to calm down and to behave better after its removal [49].

In additional to, **Mohamed N. F (2007)** concluded that all nurses in his study viewed restraint has physical complication where as a minority reported psychological complication from use of restraint, and see patients childish in their behavior, and also lack sensation and feelings [45]

In another hand, the present study revealed that the level of education already influences on the patients' opinion toward used of physical restraints. The studied patients who higher level of education had negative opinion about used of physical in psychiatric hospital. This supported by the previous studies in different countries that show the high level of education effect on psychiatric patients opinion and attitude toward benefits of physical restraints, they saw it as a punishments not as a treatment [50-52].

In another line, the nurses' age and their years of experiences were a considered an important factors that influences on nurses' opinion toward used of physical restraints. This appeared in the present study, where the younger nurses with few of experiences had positive opinion toward applied restraints on hyperactive or aggressive patients, while increased age and experiences the nurses delayed the decision making toward used physical restraints in last choice. This finding was supported by **Klinger V (2001) & Husum TL et al (2010)** who found the nurses with younger age and less duration of experience had more harsh attitude, and prefer restraint even hazardous admitting force [53-54] .Moreover, nurses with higher age and more experience has constrictive attitude, refuse restraint and not agree about restraints for hyperactive patients.

Sequira H and Halstead S (2004) who found that nurses with greater experience of implementing restraint process to intervene in aggressive incidents, able to express their opinion about causes of restraint use, but that nurses with little experience unable to express their opinion about the actual cause of implementing physical restraint [31].

The best explanation of this finding in the present study may be lack of communication skills among younger nurses to deal effectively with patients in various situation, beside inability to use themselves as a therapeutic tool, wherein the new nurses unable to control of their emotions in stress situations, and absolved patients' anger, this lead to provocative or stimulated aggressive behaviors among frustrated patients who not met their needs or repressed their strong emotions. This explanation supported by **Vythilingum.B (2009)**, **Read**.**F** and **Fitzgeralad.L (2014)who** stated that younger nurses lack of art of effective communication and empathy to handling effectively with aggressive patients.[55,56] This is accordance with **Gatheil.T (1978),** who stated that the restraint as an intervention, represent the last resort, and that the earliest interventions, as talking with the patient in distressing situations, offer of support, explanation or just company, and working with the basic treatment alliance, will prevent increase tension or agitation.[57]

Conclusion

According to the findings of the present study, it can be concluded that a round one third of studied patients had negative opinions about use of physical restraint, and nearly half of them were average. In another hand more than half of studied nurses had positive opinion and nearly to one third were average regarding to using of physical restraints.

Recommendation

Based on the results of this study, the following recommendations are suggested:-

Nurses should be involved in educational programmed about:-

1-Therapeutic use of self and effective communication skills to improve their interaction with patient and encourage them express gradually about strong feeling.

2- Aggressive behaviors, its' dynamic and predisposing factors among hospitalized psychiatric patients and how to deal effectively with those patients.

3- Nursing intervention that facilitate safe and secure environment, de-escalation

of aggression process, conflict resolution and problem solving.

4- The alternative least restrictive methods that may be applied with patients who have history of violence.

5- Applied physical restraints effectively with patients and debriefing following this procedure to minimize a negative effect on patients who experiences of being restrained.

References

- **Tebaldi C.** Understanding involuntary hospitalization and use of seclusion and restraint. The Nurse Practitioner Journal .2012; 37: 13-6.
- **Alty A.** Nurses learning experiences and expressed opinion regarding seclusion practice. Journal of Advanced Nurses 1997; 25: 786-793.
- **Gallagher A.** Ethical issues in patient restraint. Nursing Times 2011; 107: 18-20.
- **Wynn R .** Staffs Attitudes to the use of restraint and seclusion in Norwegian University Psychiatric Hospital. Journal Nord Psychiatry. 2003; 57(6):453-459.
- **Sailas EA, Wahlbeck K.** Patient staff perception of restraints in hospitals.2006.
- **Riley D, Mohan C, & Whittington R.** Patient restraints position in a psychiatric in patient service. Nursing Time 2006; 102(3).
- **Currier GW, Allen MH.** Emergency psychiatry: Physical and chemical restraint in the psychiatric emergency service. Psychiatric Services 2000; 51: 717-9.
- **Perkins E, Prosser H, Riley D, Whittington R.** Physical restraint in a therapeutic setting; a necessary evil?. Journal of Law Psychiatricy. 2012; 35: 43-9.
- **Radziewicz MR, Amato S, Bradas C, Lorraine C.** Use of Physical Restraints with Elderly Patients. 2009. Available from: http://www.consultgerirn.org/topics/physical_restraints/.
- **Klimitz H, Uhlemann H, Fahndrich E.** Are restraints used too frequently? Indications, incidence and conditions for restraint in a general psychiatric department. Psychiatric Praxis. 2009; 25(5):235-9.
- **Horsburgh D.** How, and when, can I restraint a patient? Journal of Post Medicine 2004; 80: 7-12.
- **Baxter E, Hafner J, & Holme G .** Assaults by patients: The experiences and attitudes of psychiatric hospital nurses 2009; 26(4): 567-573.

- **Sullivan – Marex E .** Psychological responses to physical restraint use in in adult . In **Simpson S**. Nurses and the use of restraints. Journal of Education and Aging 1999; 14(1): 75-94.
- **Chien WT, Chan CW, Lam LW,& Kam CW.** Psychiatric inpatients' perceptions of positive and negative aspects of physical restraint. Patient Education and Counseling. 2005; 59:80-6.
- **Difabio S.** Nurse's reaction to restraining patient. Journal of American Nursing. 1998; 973 – 75.
- **Balevre P.** Is it legal to be crazy? An ethical dilemma. Archives of psychiatric Nursing Journal. 2001;15:241-244
- **Scherer.** Guiding principle on restraint / Seclusion. Washington. 1991. http;//wwww.naphs.org.
- **Robinson J, McCann SJ,& Holmes HN.** Nursing perception. 4th ed; london. Lippincoll Williams & Willkins 2004:39-43.
- **Gelkop M.** Attitudes, opinions, behaviors and emotions of the nursing staff toward patient restraint. Issues in mental Health Nursing. 2005, 20(6):571-86.
- **Pollard R, Yanasak EV, Rogers SA, &Tapp A.** Organizational and unit factors contributing to reduction in the use of seclusion and restraint procedures on an acute psychiatric inpatient unit. Psychiatric Quarterly. 2007;78:73-81
- **Bonner G, Lower T, Rawcliffe D, & wellman N.** Trauma for all: A pilot study of the subjective experience of physical restraint for mental health in patients and staff in the U. K .Journal of psychiatric and Mental Health Nursing 2002; 9: 465- 73.
- **Levans L ,& Strumpt .N**. Perception of restraint use questionnaire (PRUQ). 2004. University of Pennsylvania. School of Nursing.
- **Winship G.** Further thoughts on the process of restraint. Journal of psychiatric and Mental Health Nursing 2006; 13: 55-60.
- **MeehanT, Vermeer C, & Windoser C.** Patients' Perceptions of seclusion: a qualitative investigation. Journal of Advanced Nursing 2002; 31 (2): 370-77.
- **Theoder P.** Perceptions of seclusion and restraint by patients and staff in an intermediate – term care facility. Journal child and Adolescent Psychiatric nursing, 2011. http://www.findarticles.com.
- **Evans L, & Strumpt N**. Primary nurse of questionnaire (PNQ).2004.

University of Pennsylvania. School of Nursing.

- **Fisher W**. A review of the literature: Restraint and seclusion. Journal of American psychiatry 1994; 151(11): 1584-88.
- **Steel R.** Staff attitude toward seclusion and restraint: anything new? Journal of perspectives in psychiatric care 1993; 29(3):23-28.
- **Karen V.** Help the health care team releases its hold on restraint. Journal of Nursing Management 1999; 30(12):19-24.
- **Kathleen R.** Developing restraint reduction program, for child/ adolescent inpatient treatment. Journal of child and Adolescent Psychiatric Nursing. 2001. http://www.findarticles.com.
- **Sequeira, H. & Halstead, S.** Control and restraint in the UK: Service user perspectives. British Journal of Forensic Practice.2002; 4, 9-18.
- **Bower, F. L., McCullough, C. S.** & **Timmons, M. E.** A synthesis of what we know about the use of physical restraints and seclusion with patients in psychiatric and acute care.2003.
- **Wong S, Tong Chien W.** young medical patients' experience of physical restraint: an exploratory study. Journal of clinical Nursing.2005; 14:120-21.
- **Steinert T, Lepping P, Bernhar R, Conca A, Hatling T,& Janssen W**. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. Social psychiatry and psychiatric epidemiology. 2010;45(9):889-97.
- **Keski-Valkama A.** The Use of seclusion and mechanical restraint in psychiatry: A Persistent Challenge over Time. Finland: University of Tampere; 2010.
- **Meehan T, Vermeer C, & Windsor C.** Patients' perceptions of seclusion: A qualitative investigation. Journal of Advanced Nursing, 31(2), 370-377, 2002.
- **Moher W, Mahon M, Noone M.** A restraint on restraints: The need to reconsider the use of restrictive interventions. Journal of Archives Psychiatric nursing 1998; 12(2): 95-104.
- **Frueh C, Knapp R, Gusack K, Grubaugh A, Sauvageot J, cousins V, Yim E, Robins S, Monnier J, & Hiers J.** Special section on seclusion and restraint: patients of traumatic or harmful experiences in psychiatric

setting. American psychiatric association 2005; 56:1123-33.

- **Rogers C.** (1959). A theory of therapy, personality and interpersonal relationship, as developed in the client centered frame work. In : **Sequeira H, Simon H**. Psychological effect on nursing staff of administering physical restraint in a secure psychiatric hospital.British Journal of forensic practice, 2004. http://www.findarticles .com.
- **Tong Chien W, Chan L, Lam L, Kam C.** Psychiatric in patients' perceptions of positive and negative aspects of physical restraint. Journal of patient Education and counseling 2004. The Nethersole School of Nursing Faculty of Medicine, the Chinese University of Hong Kong.
- **Wynn R.** Psychiatric Inpatients' experiences with restraint. J of Forensic Psychiatry and Psychology 2004; 15(1):124-44.
- **Roachs S.** Introductory gerontological nursing. 1sted. New York: Lippincott company, 2001:33-34.
- **Frost S, Wells D.** Psychiatric nurses' thoughts and feelings about restraint use: a decision dilemma. Journal of Advanced Nursing. 2000; 31(2):362-9.
- **Huckshorn KA.** Reducing seclusion and restraint use in mental health settings: Core strategies for prevention. Journal of Psychosocial Nursing and Mental Health Services. 2004;42:22-33.
- **Mohamed N F.** Reaction of patients and psychiatric hospital staff about physical restraint. Presented to Faculty of Nursing, Alexandria University 2007; 73-75.
- **Chuang YH**. Nurses' feelings and thoughts about using physical restraints on hospitalized psychiatric patients. Journal of Advanced Nursing. 2006;55(1):20-8.
- **Hantikainen V ,& Kappeli S.** Using restraint with nursing home residents: A qualitative study of nursing staff perceptions and decision-making. Journal of Advanced Nursing.2000, 32(5):1196-1205.
- **Lee S, Gray R, Gournay K.** Views of nursing staff on the use of physical restraint. Journal of Psychiatric and Mental Health Nursing. 2003;10 (4): 425-43.
- **Abdel-dayem S.** Nurse's opinion regarding physical restraint for psychiatric patients. High Institute of Nursing. The Second International

Scientific Nursing Congress on Health promotion 3rded; 1991.

- **Chien WT, Chan CW, Lam LW, Kam CW.** Found psychiatric inpatients with high level of education, perceptions of negative aspects of physical restraint. Patient Education and Counseling. 2005;59:80-6.
- **Gulpers M J, Bleijlevens, M C., Ambergen T, Capezuti E,& Van Rossum E.** Belt restraint reduction in patient hospital: effects of a multicomponent intervention program. Journal of the American Geriatrics Society. 2011; 59 (11) 2029–2036.
- **Kopke S, Mu¨ hlhauser I, Gerlach A, Haut A, Haastert B, Mohler R., & Meyer G**. Effect of a guideline-based multicomponent inter-vention on use of physical restraints in nursing homes: a randomized controlled trial. Journal of the American Medical Association 2012,307 (20) 2177–2184.
- **Klinge V.** Staff opinions about seclusion and restraint at a state forensic hospital, Hospital and Community Psychiatry Journal.2001, 45: 138-141.
- **Husum TL, Bjorngaard JH, Finset A, & Ruud T.** A cross-sectional prospective study of seclusion, restraint and involuntary medication in acute psychiatric wards: patient, staff and ward characteristics. Health services research. 2010;10:89.
- **Vgthilinyum B.** before applying restraint and after. Continuing Medical Education 2009;27(10);450-452.
- **Read F, & FitZgerald L**. The mxed attitude of nurses to caring for people with mental illness in a rural general hospital International Journal Mentally Health Nursing 2014(14); 249-257.
- **Gutheil T.** Observation on theoretical basic for seclusion of the psychiatric inpatient. Journal of American Psychiatric Association1978; 135(3): 325-28.

Effect of nursing care protocol on clinical outcomes of Thalassemic children who receiving iron chelation therapy

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Abstract

Children with hemoglobin level less than 7 g/dl require regular transfusions in the presence of growth impairment. The children need to take medications that rid the body of extra iron. Thalassemic children receiving desferal should be monitored for body weight and growth every 3 months. Protocol of care provided for thalassemic children on the chelation therapy is to achieve the optimal outcome in the treatment. Splenectomy is considered when a patient is more than five years old. **The aim of this study;** was to evaluate the effect of the nursing-care protocol on the clinical outcomes of thalassemic children who receive iron chelation therapy. This study was conducted at Pediatric Hematology and Oncology Unit of Tanta Main University Hospital. **Materials and method,** this study was conducted at Pediatric Hematology and Oncology Unit of Tanta Main University Hospital. All pediatric nurses (40) in the previously mentioned setting and assigned for providing care for thalassemic children. Thalassemic children who received the chelation therapy were collected randomly. **Four tools were used of collect the data;** a structured interview schedule, nurses' knowledge regarding thalassemic children, Nurses skills observation checklist and anthropometric measurements for thalassemic children. **Results** revealed that the mean age of the nurses There was a significant difference in nurses' knowledge about anemia and chelation therapy before and immediately after the nursing - care protocol More than half of the studied children were underweight while children's upper mid arm circumference was normal and more than half of the studied children and skin-fold thickness was normal the third of the studied children. It can be **concluded** that the application of the nursing-care protocol caused improvement in nurses' knowledge, practice and clinical outcomes of thalassemic children.

Key words: Nursing care protocol, clinical outcomes, thalassemic children, iron chelation therapy

Introduction

Thalassemia is a pediatric inherited disease caused by genetic blood disorder. There is an absence or reduction in the production of hemoglobin. The erythrocytes are unable to carry adequate oxygen to the cells and tissue, leading to inadequate tissue perfusion, delayed growth and development with a usual life span of 20–30 years. The body is disabling to produce enough protein needed to form hemoglobin to carry oxygen throughout the body. Insufficient oxygen in bloodstream notices certain signs and symptoms like fatigue and other health problems. Children live full lives with careers and children of their own. [1, 2]

World widely, there are 350,000 births per year with serious hemoglobinopathies. Increasing migration of population at risk to non-endemic countries has resulted in increasing prevalence of thalassemia gene mutations in all parts of the world. In developed countries, thalassemia trait forms a protection against malaria, where malaria is endemic. The severe form of the disease especially prevails in small countries where there are close family marriages. [3-5]

There are numerous types of thalassemia depending whether a person has defects in the alpha (α) or beta (β) protein chains. Alpha thalassemia refers to a group of disorders characterized by inactivation of alpha globin genes. The production of α globin is deficient. β thalassemia is the defective production of β globin. The beta chains of the molecule of the hemoglobin are missing, resulting in deficient hemoglobin and the development of fragile, microcytic and hypochromic erythrocytes. [1, 4]

Genes determines who will inherit thalassemia. The most common single gene disorder known as a silent carrier state causes no health problems and the hemoglobin functions normally. It is called a silent carrier because of how difficult it is to detect. A silent carrier state was diagnosed by deduction when an apparently normal individual has a child with hemoglobin H disease or alpha thalassemia trait. [4]

Diagnosis of thalassemia through laboratory screening for patients rule out other causes of anemia. Complete blood count, hemoglobin electrophoresis, fractions of hemoglobin and other variants are measured. Characteristic faces of thalassemia major are: The maxilla may overgrow with overbite and prominence of the upper incisors.Separation of the orbit

ribs. Long and flat bones may be deformed. Enlarged heart, cardiac failure, hyperbilirubinemia, gallstones, gout, splenomegaly, liver endocrine, and hepatocellular carcinoma may happen. [5, 6]

The most common complications of thalassemic children are cardiac, short stature, pubertal delay, and osteoporosis. Repeated transfusions increase the risk of blood-borne diseases including hepatitis B, C and blood-borne infections. Infection may cause pyrexia and enteritis in children with iron overload. Other less common complications include diabetes mellitus. Disturbed body image relates to alterations in the perceptions of self-due to actual or perceived alterations in body structure or function. Lack of condensation in one's self is characterized by negative self-statements. Lack of concern about personal appearance and withdrawal from others are not related to physical problems or attributes.[1, 7]

The main problems of thalassemic children are in conduct, socialized aggression and anxiety withdrawal. The hematological parameters do not show significant predictive value in behavioral problems of thalassemic children. Some patients have a serious psychological aversion to take the medicine and may need professional counseling. It is imperative that patients with thalassemia understand their disease and treatment in order to follow their prescribed medical regiments. Child life programs in health-care settings minimize psychological trauma and promote optimal development of children and their families. [8]

With improved screening programs, better methods of measuring iron's impact, a safer blood supply and more drug treatment options, people with thalassemia are surviving until their fifth decade and beyond. The golden rule for survival is less iron is better and strict adherence to treatment is the most important predictor for survival. The aim of transfusion therapy is to permit normal growth and activity level, to prevent skeletal changes, and to maintain the pre-transfusion hemoglobin level between 9 and 10 g/dl. The amount of blood received on transfusion day is determined by pre-transfusion hemoglobin levels. [9, 4, 10]

Children who are being transfused every three or four weeks gain 0.5 mg/kg per day of iron in excess of natural losses. Children with a hemoglobin level less than 7 g/dl require regular transfusions in the presence of growth impairment. Post-transfusion

hemoglobin should be between 13.5 - 15.5 g /dl. Annual blood transfusion requirement in patients without hypersplenism is usually below 200 ml packed red blood cells/kg per year. [1, 10]

Dealing with iron overloaded from blood transfusions, from iron in the food eaten and from other issues related to the disease and its treatment has great importance. The children need to take medications that rid the body of extra iron. Children should start with a daily chelation therapy based on the total amount of blood transfused, ferritin levels, and degree of iron loading. Chelation therapy should start after about one year of chronic transfusions. Serum ferritin should be at least 3,000 µg/g dry weights before starting chelation regimen of chelation therapy[10, 11]

There are three approved iron chelators: deferoxamine (Desferal), deferasirox (Exjade), and deferiprone (L1). Deferoxamine treatment is usually withheld until after two years of age because side effects of chelators in general are greater with limited iron stores and in children under two to three years of age. Adequate assessment of iron stores before the initiation of therapy is important. Treatment for seven days a week should be the goal. Starting at a lower number of days per week and advancing to five to seven help the family adapt to and accept the new therapy. A small battery-operated pump, called an infusion pump, is used to get the drug into the body. Some patients who may use a balloon pump which comes with pre mixed are ready to use deferoxamine. [2, 11]

Thalassemic children receiving desferal should be monitored for body weight and growth every 3 months. An increase in chelation is frequently necessary with an increase in blood requirement. A liver biopsy should be obtained before initiating treatment. Increasing length of survival has become an increasing problem. Desferrioxamine can cause toxicity. Local reaction at the site of injection can be severe. High-frequency hearing loss has reported in 30-40% of patients. Color and night blindness can be occurring. Deferoxamine manufactured in a powder form and mixed with sterile water is ready to be used. [1, 11]

Splenectomy is considered when a child is more than five years old Increased transfusion requirements exceeding 200-250 ml/kg/year of pure red blood cells are evidence of hypersplenism and massive splenomegaly. [12]

The only cure for thalassemia is stem cell transplantation which is also called a bone marrow transplant which has better outcomes. It should be offered if there is a compatible sibling / family member. Bone marrow transplantation from unrelated and alternative donors, cored of blood transplantation and peripheral blood of stem cell transplantation services can be indicated. A cure means that genetic defect that causes the anemia has been corrected and that patient's body begins producing healthy blood cells. Transfusions and chelation therapy do not cure the condition. There are some curative approaches available: stem cell transplantation and gene therapy. [1,2]

The nurse plays an important role for the care of thalassemic children because the nurse helps in improving the quality of life and facilitating the child and family's adaptation to illness. Nursing care is the services rendered by the nurse for the benefit of the child using the protocol which is a detailed set of instructions to guide the care of a child or to assist the practitioner in performance of a procedure. [13]

Thalassemia children should undergo at least an annual comprehensive assessment. During such an assessment, recommendations are summarized and communicated directly. Monitoring chelation therapy to achieve optimal outcome in the treatment and Primary care are included. Monitoring of growth, general health and twenty-four hour backup consultation should be available. Clinical outcomes are broadly agreed such as measurable changes in health or quality of life that result from care. Constant review of clinical outcomes establishes standards which continuously improve all aspects of the practice. [14]

The aim of this study was to:-

Evaluate the effect of nursing-care protocol on the clinical outcomes of thalassemia children who receive iron chelation therapy.

Setting:

This study was conducted at Pediatric Hematology and Oncology Unit of Tanta Main University Hospital.

Research Design:

Quasi-experimental research design was used in this study.

Subjects:

1-All pediatric nurses (40) in the above-mentioned setting were assigned for

providing care for thalassemic children with different qualifications and length of experience.

2- Thalassemic children who received chelation therapy were randomly selected and had the following criteria:

- Age ranged from 6 to 18 years
- Free from any other chronic diseases except complications of thalassemia.

Tools of data collection:

Four tools were used for collect the data.

Tool I: a structured interview schedule:

It was designed and developed by the researcher and adopted from previous research references after reviewing related literature. It was done in Arabic form in order to prevent misunderstanding. The investigator interviewed the studied nurses and gave them the chance for asking any question. It included the following parts:

A-Socio-demographic characteristics related to:

a- **The nurse such as** age, qualifications, marital status, length of experience and residence.

b-The children such as age, sex, birth order, education and mother/father consanguinity.

c- Medical history of the disease which included: onset, diagnosis, types of treatment, places of investigation, blood transfusion, iron chelation therapy.

d- Activities of the children's everyday which included life sports, activities and complaint or suffering from any symptoms after doing any effort.

Tool II: Part (1): Nurses' knowledge regarding thalassemic children included

Definition of anemia and thalassemia, Component of blood, function and normal level of hemoglobin.

Normal level of serum ferritin in the blood, how does regular blood transfusion lead to iron overload, iron-containing diet factors preventing iron absorption, factors increasing iron absorption and effect of iron overload on different body organs.

Measures for dealing with thalassemic children., New trends for early detection.

Part (2): Nurses' knowledge about the therapy of iron chelation included: importance, types, and forms, methods of administration, side effects and precautions that were already taken to avoid complications.

The nurses were asked to respond to these questions with the correct response for each question .Evaluation of thalassemic children, clinical outcomes and findings were compared with normal results

The scoring system:

The interview sheet contained multiple choices and was revised by a pediatric nursing experts .The nurses were instructed to choose one or more correct answer / answers from choices of each question. Assessment of nurses' knowledge of the chelation therapy was as follows:

The total score of the nurses' knowledge equals 100% and accordingly the nurses' answer were classified as follows:

- Correct and complete answers were scored (2)
- Correct and incomplete answers were scored (1).
- Wrong or incorrect answers and didn't know answers were scored (0)

Total scores of total nurses' knowledge were calculated and classified as follows:

- Poor score of knowledge (Less than 60%)
- Fair score of knowledge (60% - 69 %)
- Good score of knowledge (70- 100%)

The researcher assessed the nurses' knowledge of thalassemic children three times:

1) Before sessions.
2) Follow up immediately after sessions.
3) Follow up three months after sessions.

Tool III: Nurses' skills of observation checklist: the researcher developed this tool after reviewing the related literature. It was used to assess nurses' clinical performance during:

a- Administration of deferoxamine (Desferal) subcutaneously by using infusion pump.

b- Administration of blood transfusion.

The scoring system:

The observation sheet containing steps of the procedures was revised and observed by a pediatric nursing expert .The nurses were observed during the procedures without any comment. Assessment of nurses' practice of chelation therapy and blood transfusion was as follows:

The total score of the nurses' practice equals 100% and accordingly the nurses' administration was classified:

Nurses' performance of chelation therapy and blood transfusion was as follows:

-Done correctly was scored 1

-Incorrect or not done was scored Zero

The total score of the nurses ' performance equals 100%. Total scores of nurses' performance were calculated and accordingly classified follows:

- Poor performance (Less than 60%)
- Fair performance (60% - 69 %)
- Good performance (70 - 100%)

The researcher assessed the nurse's performance regarding desferal administration subcutaneously, using mini-pump and blood transfusion administration to thalassemic children three times:

1) Before the sessions.

2) Follow up immediate after sessions.

3) Follow up three months after sessions.

Tool IV: Anthropometric measurements for thalassemic children: weight, height, upper mid arm circumference, skin-folded-thickness and body mass index were measured and calculated. Each of these measurements was taken according to the standard procedure recommended by Jelliffe. [15] The improvement or at least stability of anthropometric measurements indicates the effectiveness of the sessions.

Clinical outcomes of thalassemic children; the findings were compared to normal results.

The scoring system:

The anthropometric measurements and steps of the procedures were revised through related literature. Nurses provided Helping and cooperation. Assessment of anthropometric measurements was as follows: (Weight, height, upper mid arm circumference, skin-fold thickness and body mass index). Each one was taken according to standard and compared with normal standard of corresponding Egyptian for age and sex.

1-Weight / age (was measured using a bathometer scale and recorded to the nearest tenth of a kilogram) and was used as an indicator of the nutritional state for the children classified as follows:

- Children having less than 90% of the standard weight / age were considered underweight.
- Children having 90-110 % of the standard were considered normal.
- Children having over 110 % of the standard were considered overweight. (WHO 1987)(16)

2- Height / age (was measured using the stadiometer scale and was taken to the nearest 0.1 cm and then recorded) and was used as follows:

- Children having less than 90 % of the standard height were considered stunted.
- Children having 90 % - 110 % of the standard height were considered normal.
- Children having over 110 % of the standard height were considered tall. (WHO1987)(16)

3- Upper mid arm circumference was measured by letting the child's right arm

be flexed 90º at the elbow, marking the midpoint between the acromion and the olecranon on the posterior aspect of the arm and wrap a paper or steel measuring tape around upper arm at midpoint . The measurement was recorded to the nearest 0.1 cm.

4- Skin-fold thickness: Skin - fold thickness of triceps was measured using the Harpenden skinfold caliper. Let the child's right arm flex 90 at the elbow, marking the midpoint between the acromion and the olecranon on the posterior aspect of the arm. Let the child's arm hang freely and grasp a fold of skin between the thumb and forefinger about 1 cm above the midpoint. Gently pull a skin fold away from the underlying muscle, continue to hold the skin until the measurement is completed, place the caliper jaws over the skin-fold at the midpoint mark, estimate the reading to the nearest 1.0 mm, 2 to 3 seconds after applying pressure and read measurements until duplicates agree within 1 mm.

- Children less than 80 % of the standard were considered under normal.
- Children having 80 – 110 % of the standard were considered normal.
- Children having over 110 % of the standard were considered above normal.

5- Body Mass Index: Accurate height and weight were required for calculation of BMI. It is calculated the same way as for adults (BMI=weight (Kg)/ height ^{2} (m) ^{2}, but then compared to typical values for children of the same age. The BMI percentile allows the nurse to compare between children of the same sex and age. [16, 17]

Category	BMI (children 2- 20)
Under weight	BMI for age and sex 5%
Normal weight	BMI for age and sex ≥5 to ≤ 85 %
Risk for overweight	BMI for age and sex ≥85 to ≤ 95 %
Overweight	BMI for age and sex ≥ 95 %

Method

1- **Administrative process:**

Such a study was carried out after getting an official permission from the responsible authorities and administrative staff of hospital department to carry out the study after the explanation of the aim of the study.

Oral consent was obtained from the nurses for agreement to participate in the present study after explanation of the study purpose.

Each nurse was individually interviewed to collect necessary data of tool I and tool II. The time consumed to each interview sheet ranged from 30-40 minutes.

Each nurse was observed during using tool III (A). The time consumed to observe each nurse ranged from 15-20 minutes for desferal administration subcutaneously by using infusion pump.

Each nurse was observed using during tool III (b). Time consumed to observe each nurse ranged from 2-3 hours for blood transfusion.

2-**Ethical consideration:** Participants, oral consent was obtained and purpose of the study was explained to them. Each subject informed about the confidentiality and his or her right to withdraw at any time without any compensations. Participants' privacy was considered.

3- **A Pilot Study: pretest of the used tools was** carried out on (10% of nurses). It was done before starting the data collection to verify the applicability, feasibility and clarity of the tools. The results of the pilot study were used to finalize the tools and to schedule the fieldwork, to estimate and to determine the time required to complete data collection.

Those who shared in the pilot study were excluded from the study sample.

4- **Tool development:**

Four tools were used in this study:

Tool (I): The researcher had an interview with the expert group to elicit their opinions regarding the expected competence (knowledge and skills) about the effect of the protocol on clinical

outcomes of thalassemic children who receive iron chelation therapy.

Tool (II): It was used by the researcher to compare the actual nurses, knowledge regarding thalassemic children with the ideal knowledge mentioned in literature review section.

Tool (III): It was used by the researcher to assess the nurses' competence (knowledge and skills) of administration of desferoxamine (Desferal) subcutaneously by using infusion pump and administration of blood transfusion.

Tool (IV): It was used by the researcher to assess the anthropometric measurements: weight, height, upper mid arm circumference, skin-fold thickness and body mass index were which all measured, calculated and compared with the standardized.

Validity of the tools: The tools of such a study were tested for content validity by three experts of the jury in the field of Pediatric Nursing and Pediatrics. Modifications were carried out accordingly.

5-**Nursing care protocol**: It was based on the results obtained from the assessment by using the interview schedule of observation checklist as well as literature review aiming to satisfy the studied nurse's deficient knowledge and practice about management of thalassemic children. The nursing care protocol included different sessions developed by the researcher for improving nurses' practice and knowledge for caring of children with thalassemia. Health instructions were developed and implemented through four phases:

Assessment phase: The basic competence and its underlined activities regarding the effect of the nursing care protocol on clinical outcomes of thalassemic children who receiving iron chelation therapy were done by reviewing the related literature.

- The researcher had an interview with the experts group using tool (I) explanation of the aim of the study to elicit their opinions regarding the expected competence (knowledge and skills) on the effect of the nursing care protocol on clinical outcomes of thalassemic children who receiving the iron chelation therapy. Any item in this study questionnaire- structured agreed by 60% of the expert group was included in the standards. Specialists in the field of working with thalassemic children considered as essential.

Planning phase:

It was based on the results of a questionnaire, the observational checklist

reviewing the most recent related literature, the learning needs were identified, and the nursing care protocol was developed. The preparation of suitable media for teaching was chosen.

Implementation phase:

The nursing care protocol was carried out in the lecture room in Hematology and Oncology Unit and Outpatient Clinic according to the nurses' workplace. The program was 8 sessions. The action plan was done through a structured interview with the nurses. The suitable media for teaching nurses such as lectures, videos, power point presentations , discussions, demonstrations, simulations and posters used during the nursing care protocol presentation according to the content of the session. Studied nurses were divided into subgroups. The number of each group was 10- 15 nurses. The duration of each session will be from 45 - 90 minutes, including periods of re-demonstration and discussion.

The first session: At the beginning of the initial interview, an orientation to the nursing care protocol and its objectives took place. This session included informing nurses about definition of blood, function of blood, Blood composition, anemia, normal hemoglobin level in children (male and female), the most common blood diseases especially hereditary example and how can hereditary blood diseases be transmitted and prevented.

The second session: It began with a review of concepts previously presented in the first session and progressed to the next level which focused on: definition, types, manifestations, complications, prevention of thalassemia, methods for investigations, effect of regular blood transfusion on increasing the iron level, importance of hemoglobin and iron follow up.

The third session: It focused on; normal iron level and its importance, causes of iron overload, manifestations of iron overload, complications of iron overload, method of iron precipitation and prevention of iron overload.

The fourth session: It concentrated on iron chelation therapy especially Desferoxamine (Desferal), its importance; forms; route of administration and infection control measures. Desferal was administrated subcutaneously by using infusion mini pump properly. Prevention of the complications of the therapy through: selection of suitable site of injection, follow proper nursing care during the procedure, good observation for both actual and

potential complications with measures for overcome or dealing with was important. Exjate another chelator, was taken orally, blood transfusion purpose of transfusion, and steps of procedure.

The fifth session: It focused on administration of blood transfusion: The blood keeping, carful donor selection ,ABO grouping, RH typing, cross matching, test of laboratory screening, blood irradiation, blood worming, the preferred sits for administration for children, measures of infection control, related to blood transfusion and most common complications to avoid or deal with .

The sixth session: It centered on spleen; importance, indications of splenectomy, causes of splenectomy, suitable age of spleen removal, care of splenectomized thalassemic child including kindly explanation and emotional support to the child and the caregiver .

The seventh session: It was aimed to achieve good lifestyle through**;** modifications of the life-style profile to be compatible to the disease condition which would provide lifestyle as normal as possible such as diet, activity, exercise and recreation.

The eighth session: It began with summarizing the main items in the previous sessions. Concentrating on prevention and early detection of the disease: Health Instructions about premarital genetic counseling, new trends for early detection, prevention and proper management of the disease.

Evaluation phase:

After the implementation of the guidelines , the post- test was done to the studied nurses' knowledge and practice by the same format of the pre-test, using a tool to evaluate the effect of the implemented guidelines on the nurses immediately and three months after the nursing care protocol.

Clinical outcomes of thalassemic children:

- According to the nursing care protocol, there was improvement of the nurses' knowledge regarding thalassemic children that had the impact on changing the children's lifestyle.
- The knowledge given to thalassemic children's nurses was applied and better lifestyle was achieved.
- Thalassemic nurses observed during administration of; blood transfusion,

administration of desferal using desferal pump and measuring anthropometric measurements (weight, height , upper mid arm circumference and skinfold thickness) of thalassemic children.

- Nurses care protocol-decreased children's need for blood transfusion, desferal therapy and the complications of administration. Improvement of the children' anthropometric measurements and body mass index 3 months after the nursing-care protocol than before or immediately after the nursing care protocol was noticed .

Data collection:

The researcher collected data by using interview questionnaires. Data were collected over a period of 7 months starting from 1st August 2014 to 1St March 2015. Appointment was taken according to morning shift schedule, working days and availability of nurses.

Statistical analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS. Version 17 for qualitative variable mean and standard deviation were calculated. The value of < 0.05 indicates a significant result. Analysis of the presentation study was done, using the mean, standard error, student t-test, paired t-test, Chi-square, coefficient of Linear Correlation and Analysis of variance.

Results:

Table (1) showed the percentage of the distribution of the studied nurses regarding their socio- demographic characteristics. It was observed that nurses whose age between 30- 40 years were more than three quarters of the sample (82.5%), with the mean age of 35.71 ± 18.22 years. Nineteen percent of the studied nurses have secondary education only (3 years) compared to 5% who have secondary school (Diploma and specialty) or faculty of nursing. More than a half of the studied nurses (55%) were married while 45% were single. Most of studied nurses (85%) have 10-20 years of experience. Regarding the residence, it was clear that the majority of studied nurses (87.5%) live in rural areas.

Table (2) presented the distribution of the studied children according to their characteristics. It was observed that about one-third (37.5%) of the studied children were aged ≥ 6 and (42.5%) were aged $9 <$ 12 with a mean age 9.48 ± 4.89 years. Regarding sex, it was observed that slightly less than two thirds (60%) of the studied children were males while about more than

one third (40%) of them were female. It was found that 47.5% of the studied children were the second in birth order compared to 5% who were 5th in order. This table also illustrates that 5 % of children are illiterate or just read and write. The education for the studied children was (82%, 10%, and 2.5%) for primary, preparatory, secondary education respectively. It was noticed that positive parent's consanguinity revealed in more than a half of the studied children (60%).

Table (3) illustrated the percentage of the distribution of the studied nurses' knowledge about thalassemic children. Regarding signs and symptoms of thalassemia, it a was satisfactory significant difference (P= 0.000, P= 0.004 and P= 0.000) of the studied nurses' knowledge before, immediately after and 3 months after the nursing-care protocol respectively. There was a significant difference in the nurses' knowledge about anemia, early diagnosis, causes, pathophysiology, complications, prevention and dealing with thalassemia (P= 0.001, P= 0.036, P= 0.000, P= 0.002, P= 0.001, p= 0.000, P= 0.000 and P=0.000 respectively) before and immediately after the nursing-care protocol. No significant difference for the studied nurses' knowledge in relation to mode of thalassemia transmission (P= 0.056, p= 0.606 and P= 0.160 respectively) before, immediately after and 3 months after the nursing-care protocol.

Table (4) portrayed the percent of the distribution of the studied nurses' knowledge regarding iron and iron chelation therapy. As regard to questions about iron level, function iron-chelation therapy forms of chelation therapy, affection of body organs by iron precipitation, common types of desferal, frequency of desferal weekly and its preferred sits, the studied nurses' answers were of significant difference (P=0.000, P=0.000, P=0.002, P=0.013, P=0.035. P=0.003, P=0.04 respectively) before and immediately after the nursing-care protocol. Regarding the studied Nurses' knowledge about the frequency of desferal which the child needs weekly it was of insignificant difference before and immediate after the nursing-care protocol.

Table (5) revealed the percentage of the distribution of the studied nurses' knowledge regarding desferal. The result illustrated that there was a statistical significant difference in nurses' knowledge regarding indications, side effects,

precautions and complications of desferal (P=0.034, P=0.000, and P=0.000 respectively) before and immediately after the nursing-care protocol. No significant difference was present immediately after and 3 months after the nursing care protocol.

Table (6) represented the percentage of the distribution of the nurses' knowledge regarding blood and blood transfusion. There were satisfactory significant differences in studied nurses' knowledge related to components of blood, function of blood, normal child's hemoglobin level, effect of blood transfusion, indications for transfusion, benefits of blood transfusion, complications and body responses to complications of blood transfusion (P=0.000, P=0.001, P=0.000, P=0.001, P=0.000, P=0.001, P=0.006 and P=0.000 respectively) before and immediately after the nursing-care protocol. On the other hand, there were no significant differences related to the nurses' knowledge regarding components of blood, function of blood, effect of blood transfusion, and indications for transfusion, complications and body responses to complications of blood transfusion (P=0.152, P=0.152, P=0.152, P=0.785, P=0.152, and 0.115 respectively) immediately after and 3 months after the nursing-care protocol.

Table (7) illustrated percentage distribution of studied nurses' knowledge regarding nutrition of thalassemic children. It was found that (62.5%, 92.5% and 95% respectively) of studied nurses mentioned correct and complete knowledge about types of foods rich in iron before, immediately after and 3 months after the nursing-care protocol prospectively. There was a significant relation regarding the knowledge about types of foods rich in iron before and 3 months after the nursing-care protocol (P=0.001). Foods or drinks which decrease the absorption of iron were stated correctly and completely by (2.5%, 92.5% and 85% respectively) of studied nurses before, immediately after and 3 months after the nursing-care protocol. There was a significant relation regarding the knowledge about types of foods which decrease the iron absorption before and after the nursing-care protocol (P=0.000). Foods or drinks which increase the absorption of iron were stated by (85%, 7.5% and 17.5% respectively) of the studied nurses before, immediately after and 3 months after the nursing-care protocol. There was a significant relation

regarding knowledge about types of foods which increase the iron absorption before and after the nursing-care protocol (P=0.009).

Table (8) revealed the percentage of the distribution of studied nurses' knowledge regarding laboratory investigations of thalassemic children. The table illustrated that (85%, 95% and 87.5% respectively) of the studied nurses mentioned new trends for investigations correct and complete. There was no significant relation regarding knowledge about new trends for investigations before and after the nursing-care protocol (P=0.745). As regards the importance of premarital counseling, most (90% and 100%respectively) of studied nurses mentioned that the premarital counseling was impotent before and after the nursing-care protocol. There was a significant relation regarding the knowledge about the importance of premarital counseling before and after the nursing-care protocol (P=0.04). The table showed that (55%, 100% and 95%) of studied nurses' knowledge about blood analysis of iron level was correct and complete before, immediately after and 3 months after the nursing-care protocol. There was a significant relation regarding the knowledge of blood analysis of iron level before and after the nursing-care protocol (P=0.000).

Table (9) represented the distribution of the studied children regarding the percent of the standard of their anthropometric measurements. As regards the percent the standard weight for age and sex, this table showed that 62.2% of the studied children were underweight (less than 90% of their standard weight for age and sex) and 5% were overweight (over 110% of the standard weight for age and sex).This distribution changed after the nursing-care protocol where the percent of the underweight children dropped to 35 % 3 months after the nursing care protocol and that of the overweight of studied children to 5 %. Those which changed were a statistically significant difference.

Regarding the percent of the standard height for age and sex, this table showed that 62.2% of the studied children were short stature (less than 90% of their standard height for age and sex) and 15% were normal (90% -110% of the standard height for age and sex).This distribution changed after the nursing-care protocol where the percent of the short stature of the studied children dropped to 55 % 3 months

after the nursing-care protocol and that of the normal height of studied children reached 45 %. Those changed which were a statistically significant difference.

In relation to the percent of the standard of the upper mid arm circumference for age and sex, this table showed that 62.2% of studied children were less normal (less than 90% of the standard of the upper mid arm circumference for age and sex) and 5% were above normal (over 110% of the standard upper mid arm circumference for age and sex).This distribution changed after the nursing-care protocol where the percent of the less normal children dropped to 50 % 3 months after the nursing-care protocol and that of the above normal children reached 2.5 %. Those which changed were a statistically significant difference.

The table showed also the percent of the standard of the skin-fold thickness for age and sex. This table presented that 65% of studied children were less normal (less than 80% of the standard of their skin fold thickness for age and sex) and 5% were above normal (over 110% of the standard of the upper mid arm circumference for age and sex).This distribution changed after the nursing-care protocol where the percent of the less normal children dropped to 45 % 3 months after the nursing-care protocol and that of the above normal children reached 2.5 %. Those which changed were a statistically significant difference.

Table (10) represented **the** distribution of the studied children regarding their body mass index. It was noticed that (65% and 37.5% respectively) of studied children were under weight (<18.5) before and 3 **months** after the nursing-care protocol, statistically P= (0.653).

Table (1): The percentage of the Distribution of Studied Nurses Regarding Their Socio-Demographic Characteristics

Socio-demographic of Studied Nurses	**(no= 40) No**	**%**
Age (years)		
≤20	3	7.5
30 < 40	33	82.5
- 40	4	10
Mean ±SD	**35.71 ± 18.22**	
Educational level		
Secondary school (3 years)	36	90
Secondary school (Diploma and specialty)	2	5
Faculty of nursing	2	5
Marital status		
Single	18	45
Married	22	55
Number of experience years		
Less than10	1	2.5
- 10	34	85
- 20	5	12.5
Residence		
Urban	5	12.5
Rural	35	87.5

Table (2): The percentage of the Distribution of Studied Children Regarding their Characteristics

Characteristics of Studied Children	(no = 40) No	%
Age (years)		
≥ 6	15	37.5
9 < 12	17	42.5
≥12	8	20
Mean ±SD	**9.48 ± 4.89**	
Sex		
Male	24	60
Female	16	40
Family order		
First	19	47.5
Second	14	35
Third	4	10
Fourth	1	2.5
Fifth	2	5
Educational level		
Read and write or illiterate	2	5
Primary education	33	82.50
Preparatory education	4	10
Secondary education	1	2.50
Parents' consanguinity		
Positive	16	60
Negative	24	40

Table (3): The percentage of the Distribution of the Studied Nurses' Knowledge Regarding Thalassemic Children

Nurses' Knowledge	Before the Nursing Care Protocol (no =40)						Immediately After the Nursing Care Protocol (no =40)						3 Months After the Nursing Care Protocol (no =40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
Definition of Anemia	9	22.5	3	7.5	28	70	0	0	0	0	40	100	2	5	0	0	38	95	*14.118 (0.001#)	**2.051 (0.152)	***8.970 (0.011#)
Definition of Thalassemia	9	22.5	4	10	29	72.5	4	10	0	0	36	90	4	10	2	5	34	85	*6.632 (0.036#)	**2.057 (0.358)	***2.940 (0.230)
Measures for Early Diagnosis of Thalassemia	0	0	14	35	28	70	0	0	0	0	40	100	0	0	1	2.5	39	97.5	*16.078 (0.000##)	**1.013 (0.314)	***13.032 (0.000##)
Causes of Thalassemia	12	30	0	0	28	70	0	0	0	0	40	100	2	5	0	0	38	95	*9.217 (0.002*)	**1.856 (0.173)	***13.473 (0.000##)
Pathophysiology of Thalassemia	12	30	0	0	28	70	1	2.5	0	0	39	97.5	2	5	0	0	38	95	*11.114 (0.001#)	**0.346 (0.556)	***8.658 (0.003#)
Signs and Symptoms of Thalassemia	0	0	33	82.5	7	17.5	0	0	4	10	36	90	0	0	15	37.5	25	62.5	*42.288 (0.000##)	**8.352 (0.004#)	***6.875 (0.000##)
Complications of Thalassemia	0	0	28	70	12	30	0	0	1	2.5	39	97.5	0	0	5	12.5	35	87.5	*39.342 (0.000##)	**2.883 (0.090)	***27.286 (0.000##)
Mode of Thalassemia Transmission	17	42.5	0	0	23	57.5	9	22.5	0	0	31	77.5	11	27.5	0	0	29	72.5	*3.647 (0.056)	**0.267 (0.606)	***1.978 (0.160)
Methods for Thalassemia Prevention	10	25	25	62.5	5	12.5	0	0	2	5	38	95	0	0	7	12.5	33	82.5	*54.918 (0.000##)	**3.130 (0.077)	***40.77 (0.000##)
Measures Used for Dealing with the Thalassemic Child	0	0	28	70	12	30	0	0	8	20	32	80	0	0	10	25	30	75	*20.202 (0.000##)	**0.287 (0.592)	***16.218 (0.000##)

#Significant at level P < 0.05

* Before the nursing care protocol and after the nursing care protocol

**Immediately after the nursing care protocol and 3 months after the nursing care protocol

*** Before the nursing care protocol and 3 months after the nursing care protocol

Table (4): The percentage of the Distribution of the Studied Nurses' Knowledge Regarding Iron and Iron Chelation Therapy

Nurses' Knowledge	Before the Nursing Care Protocol (no =40)						Immediately After the Nursing Care Protocol (no =40)						3 Months After the Nursing Care Protocol (no =40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
Normal Level of Iron in the Blood	27	67.5	0	0	13	32.5	9	31	0	0	31	77.5	11	27.5	0	0	29	72.5	*16.364 (0.000$^{\#\#}$)	**0.267 (0.606)	***12.832 (0.000$^{\#\#}$)
Function of Iron Chelation Therapy	12	3	0	0	28	70	0	0	0	0	40	100	1	2.5	0	0	39	97.5	*14.118 (0.000$^{\#\#}$)	**1.013 (0.314)	***11.114 (0.001$^{\#}$)
Different Forms of Iron Chelation Therapy	0	0	16	40	24	60	0	0	4	10	36	90	0	0	4	10	36	90	*9.600 (0.002$^{\#}$)	**0.001 (1.000)	***9.600 (0.002)
Affection of Body Organs by Iron Precipitation	7	17.5	0	0	32	80	0	0	1	2.5	39	97.5	0	0	1	2.5	39	97.5	*8.679 (0.013$^{\#}$)	**0.001 (1.000)	***8.679 (0.013$^{\#}$)
Organs Affected by Iron Precipitation	4	12.5	13	40.6	15	37.5	2	6.3	5	15.6	25	78.1	4	12.5	8	25	20	62.5	*6.722 (0.035$^{\#}$)	**1.915 (0.384)	***1.908 (0.368)
The Most Common Types of Iron Chelation Therapy	0	0	8	20	32	80	0	0	0	0	40	100	0	0	0	0	40	100	*8.889 (0.003$^{\#}$)	------	***8.889 (0.005$^{\#}$)
Frequency of Desferal the Child Needs Weekly	5	12.5	0	0	25	62.5	4	10	0	0	36	90	0	0	6	15	34	85	*0.680 (0.410)	**10.057 (0.007$^{\#}$)	***11.172 (0.004$^{\#}$)
Methods of Desferal Administration	0	0	0	0	40	100	0	0	0	0	40	100	0	0	0	0	40	100	--------	------	-------
Preferred Site for Desferal Administration	4	10	0	0	36	90	0	0	0	0	40	100	2	5	0	0	38	95	*4.211 (0.04$^{\#}$)	**2.051 (0.152)	***3.471 (0.062)

$^{\#}$Significant at level P < 0.05

*** Before the Nursing care protocol and immediately after the nursing care protocol**

**** Immediately after the nursing care protocol and 3 months after the Nursing care protocol**

***** Before the nursing care protocol and 3 months after the nursing care protocol**

Table (5): The percentage of the Distribution of the Studied Nurses' Knowledge Regarding Desferal

Nurses' Knowledge	Before the Nursing Care Protocol (no = 40)						Immediately After the Nursing Care Protocol (no =40)						3 Months After the Nursing Care Protocol (no=40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
Indications for the Child's Need for Desferal .	0	0	10	25	30	75	0	0	3	7.5	37	92.5	0	0	5	12.5	35	87.5	*4.501 (0.034#)	**0.556 (0.456)	***2.051 (0.152)
Side Effects of Desferal	2	5	27	67.5	11	27.5	0	0	3	7.5	37	92.5	0	0	5	12.5	35	87.5	*35.283 (0.000##)	**0.556 (0.456)	***29.647 (0.000##)
Precautions Should be Considered to Avoid Desferal's Side Effects	20	50	4	10	16	40	0	0	4	10	36	90	0	0	6	15	34	85	*27.692 (0.000##)	**0.457 (0.499)	***26.880 (0.000##)
In Case of Complications ; Stop Desferal or Wait Physician Counseling	0	0	18	45	22	55	0	0	14	35	26	67	0	0	9	22.5	31	77.5	*0.833 (0.361)	**1.526 (0.217)	***4.522 (0.033#)

#Significant at level P < 0.05

*** Before the nursing-care protocol and immediately after the nursing-care protocol**

***** Immediately after the nursing-care protocol and 3 months after the nursing-care protocol**

**** Before the nursing-care protocol and 3 months after the nursing-care protoc**

Table (6): the P**ercentage OF** the **Distribution of the** Nurses' **Knowledge Regarding Blood and Blood Transfusion**

Nurses' Knowledge	Before the Nursing care protocol (no =40)						Immediately After the Nursing Care Protocol (no=40)						3 Months After the Nursing Care Protocol (no=40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
Components of Blood	0	0	22	55	18	45	0	0	0	0	40	100	0	0	2	5	38	95	*30.345 (0.000##)	**2.051 (0.152)	***23.180 (0.000##)
Function of blood in the body	1	2.5	11	27.5	28	70	0	0	0	0	40	100	0	0	2	5	38	95	*14.118 (0.001#)	**2.051 (0.152)	***8.476 (0.013#)
Child's Normal Hemoglobin Level	21	52.5	7	17.5	12	30	0	0	0	0	35	87.5	5	12.5	13	32.5	22	55	*39.096 (0.000##)	**20.724 (0.000##)	***14.587 (0.001#)
Effect of Regular Blood Transfusion on Increasing Iron Level	10	25	0	0	30	75	0	0	0	0	40	100	2	5	0	0	38	95	*11.429 (0.001#)	**2.051 (0.152)	***6.275 (0.012#)
Indications for the Child's Need for Blood Transfusion	2	5	21	52.5	12	40	0	0	8	20	32	80	0	0	9	20	80	31	*16.659 (0.000##)	**0.075 (0.785)	***14.928 (0.011#)
Benefits of Blood Transfusion	4	10	20	50	16	40	3	7.5	5	12.5	32	80	0	0	36	90	4	10	*14.476 (0.001#)	**48.217 (0.000##)	***15.771 (0.000##)
Complications of Blood Transfusion may be Present	11	27.5	0	0	29	72.5	2	5	0	0	38	95	0	0	0	0	40	100	*7.440 (0.006#)	**2.051 (0.152)	***12.754 (0.000##)
Body Response to Complications of Blood Transfusion	0	0	23	79.3	6	20.9	0	0	4	13.8	25	86.2	0	0	9	31.0	20	68.9	*25.016 (0.000##)	**2.479 (0.115)	***13.663 (0.000##)

#Significant at level P < 0.05

*** Before the nursing-care protocol and immediately after the nursing-care protocol**

**** Immediately after the nursing-care protocol and 3 months after the nursing-care protocol**

***** Before the Nursing-care protocol and 3 months after the nursing-care protocol**

Tanta Scientific Nursing Journal

Table (7): The **percentage** of the **Distribution of Studied Nurses' Knowledge Regarding Nutritional Assessment of Thalassemic Children**

Nurses' Knowledge	Before the Nursing-Care Protocol (no=40)						Immediately After the Nursing-Care Protocol (no=40)						3 Months After the Nursing-Care Protocol (no=40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
Types of Foods Which Rich in Iron	0	0	15	37.5	25	62.5	0	0	4	10	36	92.5	0	0	2	5	38	95	*8.352 (0.004#)	**0.721 (0.396)	***12.624 (0.001#)
Foods or Drinks which Decrease the Absorption of Iron	1	2.5	38	95	1	2.5	0	0	3	7.5	37	92.5	0	0	6	15	34	85	*64.983 (0.000##)	**1.127 (0.288)	***55.387 (0.000##)
Foods or Drinks which Increase the Absorption of Iron	34	85	6	15	0	0	3	7.5	15	37.5	22	55	7	17.5	19	47.5	14	35	*19.168 (0.000##)	**12.374 (0.002#)	***9.518 (0.009#)

Statistically significant at level P < 0.05

*** Before the nursing-care protocol and immediately after the nursing-care Protocol**

**** Immediately after the nursing-care protocol and 3 months after the nursing-care protocol**

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Table (8): The percentage of the Distribution of Studied Nurses' Knowledge Regarding Laboratory Investigations of Thalassemic Children

Nurses' Knowledge	Before the Nursing Care Protocol (no=40)						Immediately After the Nursing Care Protocol (no = 40)						3 months After the Nursing Care Protocol (no = 40)						χ^2 p-value	χ^2 p-value	χ^2 p-value
	Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete		Incorrect or Don't know		Correct & Incomplete		Correct & Complete				
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
New Trends for Investigations	0	0	6	15	34	85	0	0	2	5	38	95	0	0	5	12.5	35	87.5	*2.222 (0.136)	**1.409 (0.235)	***0.105 (0.745)
Importance of Premarital Counseling	4	10	0	0	36	90	0	0	0	0	40	100	0	0	0	0	40	100	*4.211 (0.04#)	-----	**4.211 (0.04#)
Follow up of Blood Analysis for Hemoglobin Level	0	0	0	0	40	100	0	0	0	0	40	100	0	0	0	0	40	100	--------	-----	----------
Follow up of Blood Analysis for Iron Level	18	45	0	0	22	55	0	0	0	0	40	100	2	5	0	0	38	95	*23.226 (0.000##)	**2.051 (0.152)	***17.067 (0.000##)

Statistically significant at level P < 0.05

*** Before the nursing-care protocol and immediately after the nursing-care Protocol**

**** Immediately after the nursing-care protocol and 3 months after the nursing-care protocol**

*** ** Before the nursing-care protocol and 3 months after nursing-care protocol**

Table (9): Percentage of the Distribution of the Studied Children Regarding their Percent of the Standard of the Anthropometric Measurement for Age and Sex.

Anthropometric Measurement	Before the Nursing Care Protocol (no=40)		Immediate After the Nursing Care Protocol (no=40)		3 Month After the Nursing Care Protocol (no=40)		χ^2 P-value	χ^2 P-value	χ^2 P-value
	No	%	No	%	No	%			
Weight									
<90%	25	62.5	18	45	14	35	*2.460 (0.116)	**0.830 (0.361)	***6.050 (0.014#)
90%-110%	13	32.5	20	50	24	60			
>110%	2	5	2	5	2	5			
M±SD							19.3±10.8		
Height									
<90%	25	62.5	25	62.5	22	55	*0.001 (1.000)	**0.464 (0.495)	***0.464 (0.496)
90%-110%	15	37.5	15	37.5	18	45			
>110%	0	0.00	0	0.00	0	0.00			
M±SD							20.9±12.3		
Upper mid arm circumference									
<90%	25	62.5	23	57.5	20	50	*0.001 (1.000)	**0.460 (0.496)	***1.270 (0.260)
90%-110%	13	32.5	15	37.5	19	47.5			
>110%	2	5	2	5	1	2.5			
M±SD							19.3±10.9		
Skin-fold thickness									
<80%	26	65	24	60	18	45	*0.030 (0.865)	**1.800 (0.179)	***3.230 (0.072)
80%-110%	12	30	14	35	21	52.5			
>110%	2	5	2	5	1	2.5			
M±SD							19.7±11.3		

Significant at level P < 0.05

*** Before the nursing care protocol and immediately after the nursing care protocol**

**** Immediately after the nursing care protocol and 3 months after the nursing care protocol**

***** Before the nursing care protocol and 3 months after the nursing care protocol**

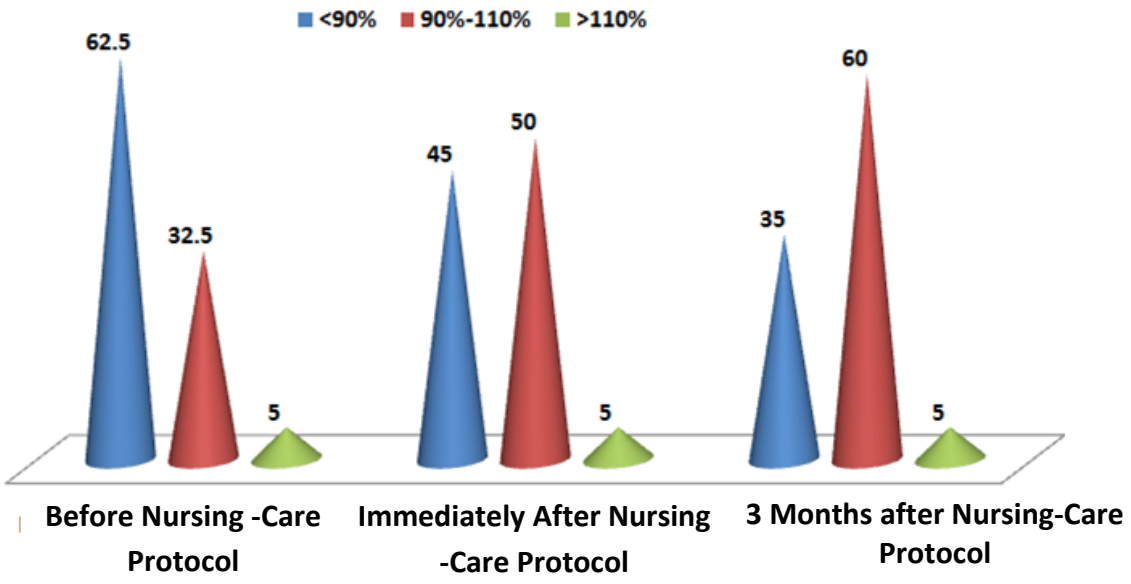

Figure (3): The percentage distribution of the studied children regarding their percent of the standard weight measurement for age and sex.

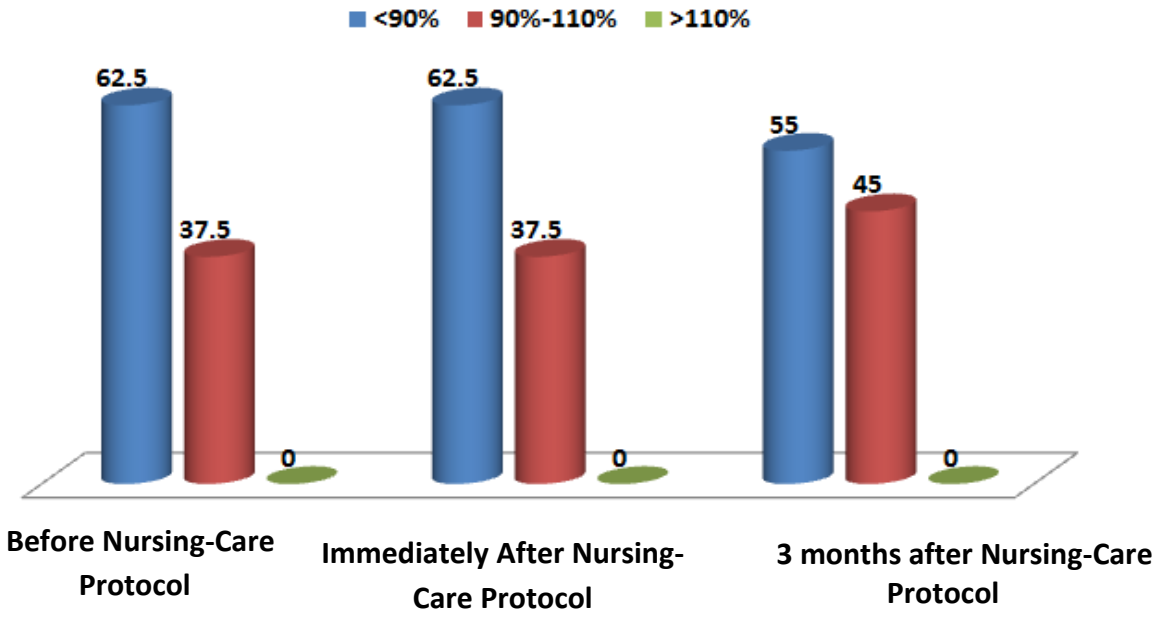

Figure (4): The percentage of the distribution of the studied children regarding their percent of the standard height measurement for age and sex.

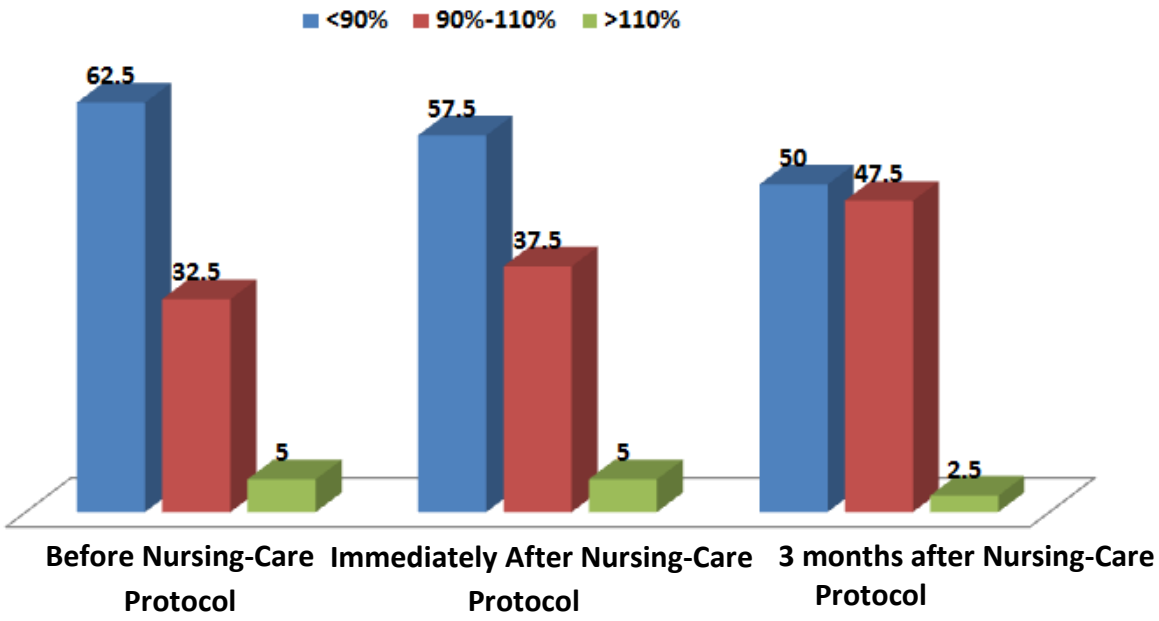

Figure (5): The percentage of the distribution of the studied children regarding their percent of the standard upper mid arms circumference for age and sex.

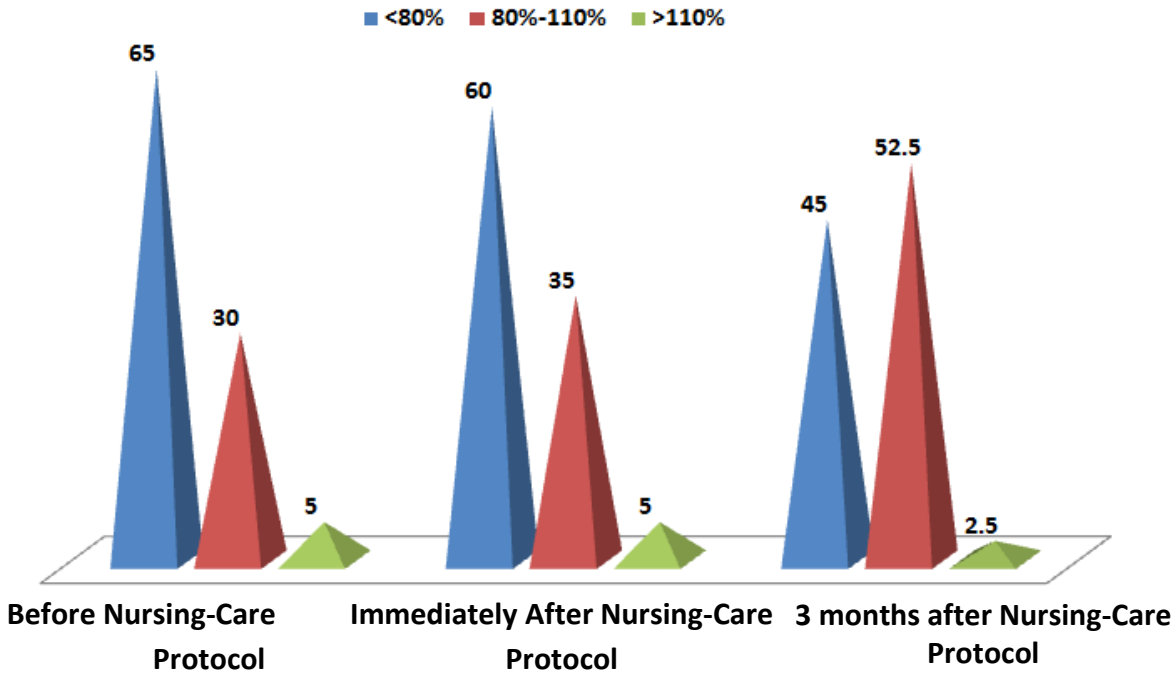

Figure (6): The percent of the distribution of the studied children regarding their percent of the standard skin fold thickness measurement for age and sex.

Table (10): Precentage Distribution of the Studied Children Regarding their Percent of the Standard of Body Mass Index

Standard Body Mass Index(kg/m2)	Before the Nursing-Care Protocol (no=40)		Immediately After the Nursing-Care Protocol (no=40)		3 Months After the Nursing- Care Protocol (no=40)		χ^2 P-value	χ^2 P-value	χ^2 P-value
	No	%	No	%	No	%			
Underweight <18.5	26	65	19	47.5	15	37.5	*2.670 (0.263)	**6.408 (0.041#)	* **0.852 (0.653)
Normal 18.5-24.9	12	30	19	47.5	23	57.5			
Overweight 25-29.9	2	5	2	5	2	5			
M±SD							19.2±10.8		

#Significant at level P < 0.05

*** Before the nursing-care protocol and immediately after the nursing-care Protocol**

**** Immediately after the nursing-care protocol and 3 months after the nursing-care protocol**

***** Before the nursing-care protocol and 3 months after nursing-care protocol**

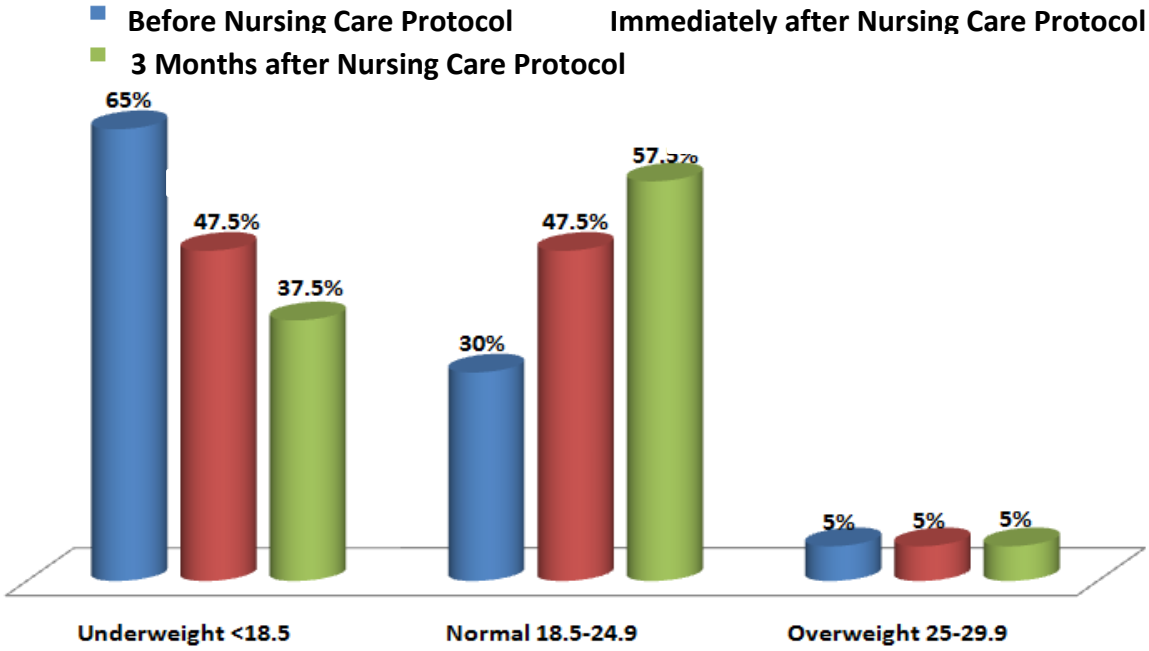

Figure (11): The percent of the distribution of the studied children regarding their percent of the standard body mass index for age and sex

Discussion

Thalassemia is an autosomal genetic disease characterized by anemia and attributed to the underproduction of globin proteins. This disease is more prevalent in people living in the Mediterranean region. The hemoglobin molecule is composed of two alpha chains and two beta ones. Thalassemia can categorize on the basis at the globin chains affected by Alpha, Beta and Delta thalassemia. [1, 3]

The outcome of thalassemic children is an objective measure of goal achievement. Meeting outcomes resolves the etiology at nursing diagnosis .The nurse evaluates the child's progress toward achievement. The plan of care depends on the implementation, interpretation whether continuous or revised. The nurse plays an important role for the care of thalassemic children which helps to improve the quality of life and facilitate the child's and family's adaptation to this illness. Monitoring chelation therapy achieves optimal outcome in the treatment of thalassemia. All thalassemic children should undergo at least an annual comprehensive assessment. During such an assessment, recommendations are summarized and communicated directly to the primary provider and family. Primary care includes monitoring of growth and general health. [2,100]

The present study has revealed that nursing students graduated from secondary school after 3 years only at the age of about 18 years. In this study, most of studied nurses were secondary school graduates and had 10 years of experience or more. This result is in disagreement with **Laeau (2009)** [17] who reported that more than half of the study participants had worked for 10 years or less. This result is in agreement with **Ahmed (2012)** [18] who found that the majority of nursing team has diplomas. Less than half of nursing team has experience more than 10 years and all of them have no experience in courses of service training. Moreover, **Hussain (2009)** [19] who reported that the majority of the nurses have general diplomas in nursing with average 12 years of experience. Also, **Parajulee (2011)** [20] who found that the mean years of experience were 11.45 among the study group.

Regarding sex, the present study has revealed that thalassemia is present in boys more than girls are. These results are in agreement with **Soliman (2010)** [21] who found that the percent of males was more than half of the studied children and **Bassit**

(2014) [22] who found that more than half of the studied children were males.

In this study, consanguinity was reported that in more than half of the studied children. Consanguinity is a social phenomenon among the Egyptian, especially in the rural areas. The traditions in Arabic countries cause increase in the relative marriage especially with the first cousin. This leads to an increase in homozygous of some conditions such as thalassemia. This result is in agreement with **Hussien (2009)** [19] who reported that more than half of the studied children with beta thalassemia had consanguineous parents and **Temtamy (2009)** [23] who reported that more than half of the studied children had consanguineous parents. This result is in disagreement with **Soliman (2010)** [21] who reported consanguinity only positive in 10 patients (25%). This result was similar to the data published by **Galanello** and **Origa (2010)** [24] who noted that ß-thalassemia is inherited in an autosomal recessive manner. **Bassit (2014)** [22] is in agreement with my result, who reported that there was positive consanguinity in 55%. These results explain the importance of premarital examination and counseling for the prevention and early detection of thalassemic children, especially in positive family history.

The present study has revealed that, nurses' knowledge of thalassemic children was low. This might be due to the fact that nurses didn't receive specific direct education. This result is in agreement with the result of **EL-Ghlban (2013)** [25] who concluded that the causes of nurses, poor level of knowledge and practices were due to that there were not continuous education and training for nursing staff .

The present study has revealed that, signs and symptoms of the disease were the methods of diagnosis in minority of thalassemic children. Severe thalassemia can cause early death due to heart failure, usually between the ages of 20 to 30. The minority of studied nurses knew these manifestations before the nursing care protocol. This result is in disagreement with **Bassit (2014)** [22] who found that pallor is present in most of the thalassemic children while jaundice is present in less than half of the studied children. This result is contradictory to **Soliman (2010)** [21] who reported that pallor is present in most of the studied thalassemic children.

Regarding the information about desferal, studied children are currently managed by iron chelator (desferal) which greatly

improves prognosis and extends the life span. It was noticed that the studied nurses had lack of the essential knowledge in this topic. The ability of the chelators to remove excess iron depends on (at least) two factors; the rate at which the chelator depletes storage iron and the rate of continued iron accumulation. This was confirmed by **Abo-Salem** (1999) [26] who stated that it is difficult for the intellectual capacity of illiterate mothers to retain knowledge in their memory for a long time without reinforcement. This result also in the same line with **Mater (2006)** [27] who found that lack of studied sample information about desferal.

The present study revealed that most of studied nurses used desferal as a therapy to get rid of iron overload before, immediately after and 3 months after the nursing-care protocol. The rest of studied children who showed non-compliance might be due to their lack of appreciation of the therapy, lack of desferal pump, money expended for transplantation of renting the desferal pump and sometimes the cost of desferal itself when it is not available in the clinic and / or the side effects. Compliance with chelation therapy is critical in prevention of iron-overload complications. These results are in agreement with **Porter (2007)** [28] who published that desferal an effective and convenient iron-chelation therapy of iron overload. This study is in agreement also with **Miskin (2003)** [29] who studied eight thalassemic children treated with intermittent (8-10 hours) intravenous desferoxamine with 7 year follow (84months). However, Desferoxamine is recommended by **Taha (2013)** [30] who mentioned that desferoxamine the first-line therapy of iron chelation therapy in children with thalassemia major but deferipone or deferasirox was indicated for treating iron overload when desferoxamine was contraindicated or inadequate.

The present study revealed that the preferred method of desferal administration to attain maximum benefits over the decrease of side effects is subcutaneous administration for 8-12 hours a day daily for 5-7 days a week. This result is in agreement with **Gomber (2004)** [31], who observed that subcutaneous desferoxamine was the most effective chelating drug in iron-overloaded thalassemic children. The ferritin level maximally decreased after 6 months with subcutaneous therapy.

Regarding the information about anemia, thalassemia, chelation therapy and blood transfusion, it was noticed sharp increase of nurses' knowledge immediately after

nursing the care protocol with a little drop for 3 months after the nursing care-protocol. This result is in agreement with **Madden (2000)** [32] and **Broom (1996)** [33] who supported the result by following training for the protocol of cares in which there is a significant acquisition of nurses' cognitive knowledge. In addition, **Inwood (1996)** [34] and **Moule (1997)** [35] who were in agreement with the current study found a significant improvement of nurses' knowledge after training for the protocol of cares. Findings were in congruent with **Broom (1996)** [33] who found that the current study presents that there was been a significant decrease in relation of knowledge for 3 months after the protocol of care. This research worked and suggesting that retention of skills and knowledge quickly deteriorates with time if they were not used or updated regularly. Some refreshment courses were recommended on a regular basis. In this regard, **Abd-Alla** [36] and **Mehany (2000)** [37] who **were** in agreement with this result found a direct relation between memory and loss of length of time that relapses after a certain educational event.

The current study revealed that studied nurses' knowledge in relation to blood transfusion improved after the nursing-care protocol more than before. Blood transfusion reduces the side effects of low hemoglobin level which results from irregular treatment. If the child is not regularly transfused, he will show signs of jaundice, pallor and hemosiderosis. This is in agreement with **Fathalla (1996)** [38], who stated that the course of the disease in childhood depends almost on the regular blood transfusion according to the protocol of care. This result in the same line with **Nabavizadeh (2007)** [39] who found that if thalassemia not treated properly, growth failure is one of the most important complications. This study was designed to evaluate the growth parameters in thalassemic children and compare the obtained data with normal children. Cross-sectional, descriptive, and analytical study was carried out on 121 thalassemic patients who received blood transfusion therapy in Yasuj with respect to the physical growth considering the growth retardation of thalassemic patients; recommended regular intervals of blood transfusion.

The present study revealed more than half of the studied nurses' knowledge was correct but incomplete about thalassemic children foods which are rich in iron but their knowledge of foods which decrease or increase the absorption of iron was unsatisfactory. This knowledge was

improved after the nursing-care protocol. Nutrition in childhood especially has an important impact on health. The maintenance of proper nutrition is especially challenging for establishing good health and preventing some common nutritional problems and chronic disorders. Nutritional practices should be demonstrated to contribute to physical, emotional wellbeing, cognitive development as well as a long healthy life. Children should avoid food rich in iron and drink a cup of tea with every meal because it interferes with iron absorption in the diet. Children should avoid food rich in vitamin- C with meal times. These results are in agreement with **El-Awany (2002)** [40] who mentioned that a quarter of children took food rich in iron or food or drinks that increase the absorption of iron as vitamin-C for minority of children.

Regarding growth, it can be an extremely complex process from infancy through adolescence. The assessment of nutrition and growth state is thus an important and integral part of care of the pediatric population. Regular assessment of nutrition can help identify infants and children at risk of malnutrition and thereby allowing nutritional intervention take place. Accurate measurement with the proper equipment and plotting of growth charts are the best approach to determine and classify the nutritional state of infants, children and adolescents.

This study reflected that about two thirds of the studied children were under weight and short stature for age and sex before the nursing-care protocol while there were improvements after the nursing-care protocol. This result related to lack of knowledge about food needs and allowance according to the child's developmental stage, health state and groups of alternatives according to socio-economic status of the family. Normal weight is defined as a term used to describe weight ranges based on height that are satisfactory related to good health. If weight is lower or higher than these ranges, it increase the health problem normal weight for an individual may differ from normal to another individual.[39] **Gronder (2005)** [41] mentioned that body weight is one of the most important measurements in assessing the nutritional state and used to periodic energy expenditure. Improvement of knowledge regarding thalassemic children's foods caused improvement in anthropometric measurement especially of child's weight. This result was in congruent with **Al-Awany (2002)** [40] who studied the nutrition of thalassemic children and found

that some improvement in the weight gained and slight increase in height after the program implementation. **Khamis (2015)**[42] who was also in agreement with this result found that more than a half of the studied thalassemic children were underweight while the rest of children who delayed their linear growth and also height for age was significantly correlated with weight for age, so the children were more stunted than wasted. The results of this study also in agreement according to statistical analysis of **Nabavizadeh (2007)** [39] who found that, the weight of 53.7% of thalassemic and 17.1% of non-thalassemic patients, with the same age group, was under the 5th percentile ($P < 0.0001$) and height were 66.9 vs. 17.1% under the 5th percentile.

Regarding mid arm circumference and skin fold thickness, more than half of studied children were under normal standard of age and sex. Small changes were noticed before, immediately after and 3 months after the nursing-care protocol. This result was attributed to the short period of intervals between anthropometrics measurements and Lack of continuous nutritional education of both the thalassemic child and his/her caregiver regarding foods or drinks that contain iron. Nutritional deficiency which reflects on the child's growth was related to many factors: hospital, staff and patient. The factors related to hospital include the governmental hospital with limited budget, absence of qualified dietitian and there is no nutritional assessment tool or nutritional support protocol for the child. In addition, the factors related to staff included: the physician-prescribed nutrition in terms of volume to be, administered not in terms of actual calories needed and lack of nutritional knowledge. The factors related to child included: catabolic state accompanied the children's disease, surgery and low socioeconomic state. The results of this

study were in agreement according to statistical analysis of **Nabavizadeh (20007)** [39] the mid-arm circumference was of 72.7 % of thalassemic and 32.5% of non-thalassemic patients, with the same age group, was under the 5^{th} percentile.

Regarding the results of the current study which is in the same line with **George (1997)** [43] who found that various growth parameters of 233 (140 boys, 93 girls) thalassemic children were compared with 74 (45 boys and 29 girls) non-thalassemic siblings. Weight and height were retarded in thalassemic children. The difference between thalassemic and non-thalassemic siblings was evident from 9+ years in both

boys and girls. Growth parameters seemed to be adversely affected with the advancing age. Among head, chest and mid arm circumferences, the mid arm circumference was more affected than head and chest circumferences. Height and weight were more severely retarded in children with hemoglobin levels of less than 8 gm/dl. The findings seemed to suggest that press of retardation was probably secondary to chronic hypoxia and iron overload.

Conclusion

Based on the findings of the present study, we can be concluded that there were lack of essential and proper knowledge and performance concerning thalassemic children management and education. The application of nursing care protocol led to improve in nurses' knowledge of thalassemia, blood transfusion, chelation therapy, splenectomy and anthropometric measurements. Performance also improved regarding blood transfusion and Desferal administration. This improvement didn't show the same extent 3 months after the nursing-care protocol. The clinical outcomes of thalassemic children improved and presented in the improvement of the children's anthropometric measurements.

Recommendations

Based on the present study, the following recommendations are suggested:

1- The education should be provided through mass media to increase the consciousness of the public regarding the importance of the premarital counseling.

2- Screening of all newborn as much as possible to know the most common hereditary diseases.

3- Governmental plan for the prevention of thalassemia must be made all over Egypt. This will help decrease the incidence with the diseases of thalassemia in Egypt.

4-Bank of umbilical cord blood is a new trend that can help in the treatment of thalassemia especially among siblings. It is important to construct a special unit with well-trained personnel in the Hematology and Oncology Unit.

5- All nurses should be involved in periodic health-education programs.

6- Periodic meetings should be held with the nurses to know the points of defect and plans of teaching.

References:

1-Rosdahl C. Text Book of Basic Nursing, 8thed. Philadelphia: Lippincott Williams Co., 2002; 234- 42.

2-Jane A. Primary Health Care of Infants, Children & Adolescents, 2nd ed. St Louis: Mosby Co., 2002; 471- 79.

3-Leenstra T, Kariuki S, Kurtis D, Oloo A, Kager P, Kuile F. Prevalence and severity of anemia and iron deficiency: cross-sectional studies in adolescent schoolgirls in western kenya. European Journal of Clinical Nutrition 2004; 58 (7): 681– 91.

4- El-Beshlawy A, Mostafa A, Inati A, Rashidy Y. International thalassemia day 4th international conference of thalassemia prevention and cure, Cairo: 2003; 60- 1.

5-Vichinsky P, Neufeld S. Cooley's Anemia Ninth Symposium. 2010 Annals of the New York Academy of Sciences.

6-Staff member of pediatric department. Pediatrics: Hematological and Oncology Disorders, 4th ed. Tanta University 2009; 329- 35.

7- Forget B, Cannelos N, Berlin E. Pediatric Clinics of North America. Thalassemia, St. Louis: Mosby Co., 2010; 24-6.

8- Origa R, Quarta G, Forni G, Longo F, Melpignano A, Galanello R. Pregnancy and beta-thalassemia: an Italian multicenter experience. Hematological 2010; 95(1): 376-81.

9- Ludder P, Vessey J. Child with a Chronic Condition, 2nd ed. Boston: Mosby Co., 2000; 405 – 17.

10-Nielsen T, Bender A. Hemoglobinopathies, In: Pediatric critical care, 4th ed. Bradley P. Fuhrman and Jerry Journal. Zimmerman. Elsevier Press 2011; 84(1): 1206-1191.

11-Abo-Elyazed D. Visual and auditory assessment in Egyptian thalassemic children with long-term use of desferroixamine, Unpublished Master Thesis. Tanta University, Faculty of Medicine 2004; 8–70.

12- Booker C, Nico M. Alexander's Nursing Pediatric, 4thed. London New York Co., 2011; 387-383.

13-Thomas B, Kate L, Halsted H, Kevin G. Patient self-management of chronic disease in primary Care, Journal 2002; 288(19): 2469-75.

14-U.S. Department of Health and Human Services, National Institute of Health, The management of sickle cell disease 2002; NIH publication.02-0117.Available at: www.nhlbi.nih

.gov/health/prof/blood/sickle/sc_mngt.pdf.

15- Jelliffe D. Assessment of the nutritional status of the community WHO. Geneva, 1966; 140-133.

16-World Health Organization (WHO), Anthropometric Indicators, Nutrition Unit, Division of Family Health, Geneva 1998.

17- Laeau S, Vandjick D, Rello J, Rosa A, Blot s. For the evidence study investigators, centers for disease control and prevention guidelines for preventing central venous catheter-related infection: results of a knowledge test among European intensive care nurses, Journal of critical care medicine 2009; 37(1)323-320.

18- Ahmed R. Developing post-operative care standards for patients who had drainage of chronic subdural hematoma, unpublished Master Degree Thesis, Faculty of Nursing, Assuit University 2012;121.

19-Hussain M, Lyneham J. Cardiopulmonary resuscitation knowledge among nurses who work in Bahrain, international Journal of nursing practice 2009; 15(4):302-294.

20-Parajulee S, Selvaraj V. Knowledge of nurses towards cardiopulmonary resuscitation in a tertiary care teaching hospital in Nepal, Journal clinical and diagnostic research 2011; 5(8): 1588-1585.

21-Soliman O,Yahia S, Shouma A. Reverse hybridization strip assay detection of ß thalassemia mutations in northeast Egypt, Hematological 2010;15(3):182-6.

22- Bassit H. Golden 6 of ß globin gene mutation in correlation with phenotyping, clinical and dermatogyphic features in Egyptian children with ß- thalassemia, Unpublished Master Thesis, Faculty of Medicine Sohag Univerisity2014;85.

23- Temtamy S, Sobh A, El-Kamah Y. Investigating interfamilial phenotypic variability among Egyptian families of beta thalassemia cases: impact of genetic counseling, Journal app sci res 2009; 5(9):1189-1185.

24- Galanello M, Origa R. Beta thalassemia, Orephanet Journal of rare diseases 2010; 10(1): 1172-1750.

25-EL-Ghlban F. Assessment of nurses' knowledge and practice related to nosocomial pneumonia at Mansoura university children hospital, unpublished Master Thesis. Faculty of Nursing, Ain Shams University 2010; 34-133.

26-Abo-Salem L. Self-care program for children suffering from beta thalassemia major, unpublished Doctoral thesis, higher Institute of Nursing. Alexandrea University 1999; 55-1.

27-Mater T. Lifestyle profile of children with ß-thalassemia major, unpublished Master Thesis. Faculty of Nursing, Tanta University, Egypt 2006; 103.

28-Porter B. Concepts and goals in the management of transfusional iron overload, Am journal haematological 2007; 82(12): 1139-1136.

29-Miskin H, Yaniv I, Berant M. Reversal cardiac complications in thalassemia major by long term intermittent daily intensive iron chelation, Eur Journal hematological 2003;70(6):408-398.

30-Taha O. Comparative study of efficacy of different iron chelating agents in treatment of iron overload in children with beta thalassemia major, unpublished Master Thesis, Faculty of Medicine Tanta university 2013;95.

31- Gomber S, Saxena R, Madan N. Comparative efficacy of desferrioxmine, deferiprone and in compination on iron chelation in thalassemic children, Indian pediatr 2004; 41(1):27-21.

32- Madden C. Understanding nursing student's acquisition and retention of CPR knowledge and skills, nursing education today 2006; 26(2):218-27.

33- Broom R. A quasi-experimental research to investigate the retention of basic cardiopulmonary resuscitation skills and knowledge by qualified nurses following a course in professional development, Journal of nursing 1996; 23(1): 1023- 1016.

34-Inwood H. Knowledge of resuscitation, intensive care and critical care nursing 1996; 12 (1):39-33.

35-Moule P, Knight C. Emergency, cardiac arrest, can we teach the skills? Nurse education today 1997; 110-99.

36-Abd-Alla M. Assessing quality care through a managerial in service training program for head nurses working in Assuit university hospital , DNS thesis of nursing service administration Assuit university 2000;22.

37-Mehany M. Effect of nursing care program on emergency nurses performance, DNS thesis in medical surgical nursing. Assuit university 2000; 166(1):167.

38-Fathalla M. Platelet aggregation and natural coagulation inhibitors in

splenectomized and non-splenectomized thalassemia children, unpublished Master Thesis. Faculty of Medicine, Tanta University, Egypt 1996; 8-5.

39- Nabavizadeh S, Anushiravani A, Haghbin S. Evaluation of growth parameters in patients with thalassemia major, hematology 2007; 12(5):445-7.

40-El-Awany S. Nutritional program for children with Beta thalassemia major and their mothers, Unpublished Doctoral Thesis, Higher institute of Nursing Tanta University 2002;50-1.

41- Gronder M, Anderson S. Foundation and Clinical Application of Nutrition, Nursing Approach, Mosby Boston Co., 2005; 363-72.

42- Khamis R. IVSII-848 gene of ß-thalassemia in Egyptian children correlation with phenotyping, clinical and dermatoglyphic features 2015; unpublished Master Thesis, Faculty of Medicine Tanta University 2015; 103.

43- GeorgeA, Bhaduri A, Sen S, Choudhry P. Physical growth parameters in thalassemic children, Indian Journal Pediatr 1997; 64(6):861-71.

Utilization of Contraceptive Methods Among Women Living in Rural Areas of Tanta city

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Abstract

Family planning not only means birth control but also it involves all the woman decisions regarding her reproductive health, including birth control, planning a pregnancy, child spacing and protection from sexually transmitted diseases. The **aim** of this study is to determine the utilization of contraceptive methods among women living in rural areas belonging to Tanta city. The study was **carried out** in four rural health care units Kharseet and Kafer-Essam health care units at Tanta first sector as well as Seberbay and Shebsheer El-Hesa health units at Tanta second sector. **The subjects** of the study consisted of 600 women attending the above mentioned health care units. A structured interview sheet which consists of three parts was used in data collection**. The first part**, concerning the women socio-demographic data, **part two** (Menstrual and obstetrical history) and **part three** (women utilization of contraceptive methods). The main **results** of this study revealed that the most common reasons for using contraceptive methods were easy to use and had minimal side effects, the majority of studied women ever and currently have used IUD's, pills, male condom, and followed by injectable methods of family planning. The characteristics of studied participants played a major role in using contraceptive methods (IUD's); women's level of education, duration of marriage and numbers of children were highly significant with using of IUD's. The present study concluded that the Egyptian women in rural society prefer using IUD's as contraceptive methods than the other methods. Based on the results of this study an educational program about the different types of contraceptive methods should be designed in rural areas for all women during their reproductive age.

Keywords: Utilization, contraceptive methods, rural areas

Introduction

Family planning (FP) is achieved through using of contraceptive methods (CM). A contraceptive method means intentional prevention of ovulation, fertilization of an ovum or implantation of a fertilized ovum in the uterine wall through the use of various drugs, devices, sexual practices or surgical procedures. It allows individuals and couples to anticipate and attain their desired number of children, spacing and timing their births [1, 2].

The benefits of family planning include preventing pregnancy-related health risks among women, reducing infant mortality, helping to prevent sexually transmitted diseases including HIV/AIDS and adolescent pregnancies, empowering women and enhancing education, slowing population growth, improved quality of life and economic security [1, 3].

India was the first country to start family planning program long back in 1952 [4]. Utilization of contraceptive methods has increased in many parts of the world, especially in Asia and Latin America, but continues to be low in sub-Saharan Africa. Globally, use of modern contraception has risen slightly, from 54% in 1990 to 57% in 2012. In Africa, it has increased from 23% to 24%, in Asia it has remained at 62%, and in Latin America and the Caribbean it rose slightly from 64% to 67%. More than 225 million women worldwide want to avoid pregnancy but are not using modern method of contraception [1, 5]. Unmet need for contraception can lead to unintended pregnancies, i.e. either unwanted or mistimed, which poses risks for women, their families and society [6, 7].

Egypt is the most populous country in the Middle East and the third most populous country in Africa. The unmet need for family planning is 12.6%. The EDHS indicated that around 59% of married women in Egypt are using contraception [8].

Optimal birth spacing is often presumed to be achieved through the practice of family planning and use of contraceptives [9]. In an ideal world, every woman would find a contraceptive method suited to her age, marital status, and her plan for future fertility. Consequently, she would use the adopted method until she is no longer exposed to risks of an unintended pregnancy, or until changing life circumstances lead her to choose a different method [10, 11]. Use of contraceptive methods has been shown to reduce unwanted pregnancy, high fertility and maternal mortality rates [12].

According to the study of unmet need for family planning in Dar -Assalam, Sudan 2001 founded that in the less-developed countries, about one-fourth of pregnancies

are unintended [13]. Also previous research conducted by the international Public Health Forum. 2014 in Egypt to determine the barriers of FP service use has highlighted the importance of looking beyond physical access to examining barriers that arise from psychosocial, administrative, cognitive and cultural factors as well as physical barriers and barriers related to the method itself [14].

Methods of family planning include the temporary (natural, mechanical, chemical, and hormonal methods), and permanent (female and male sterilization) methods of contraception, and also the folk methods of family planning [3, 15]. Decisions about contraception should be made voluntarily, with full knowledge of advantages, disadvantages, effectiveness, side effects and contraindications. Many outside factors influence this choice, including cultural practices, religious beliefs, attitudes and personal preferences, cost, effectiveness, misinformation, practicality of the method and self esteem [16]. Barriers to family planning include cognitive, cultural, demographic, administrative, physical, lack of awareness, gender of health care provider, method itself, decision and empowerment [13].

People's decisions to adopt a contraceptive method are based on whether they want another child, decisions also are deeply influenced by whether family, friends, and the larger community oppose or support family planning. The psychosocial barriers limit the decision making abilities of women, who were dominated by the men and older women (especially mothers-in-law) in the family. The more dominant the position of male in the society, the higher the probability that the decision on the timing and number of children the couple will have remain the decision of the male (husband). The degrees of communication between couples, a couple's educational level and whether they are resident in urban or rural are significant variables in a couple's decision about family size [17, 18].

The maternity nurse plays an important role in helping a woman to choose a method of contraception, learning how to use the chosen method effectively, reviewing any possible side effects and warning signs related to the chosen method and counsels the woman about the action which should be taken if she suspects failure or pregnancy [16]. So this study is conducted to determine the utilization of contraceptive methods among women living in rural areas of Tanta city**.**

AIM OF THE STUDY

The aim of this study is to determine the utilization of contraceptive methods

among women living in rural areas of Tanta city.

Research questions:

1-What are the types of contraceptive methods used by women living in rural areas of Tanta City?

2-What are the factors affecting the utilization of contraceptive methods?

Subjects and methods

Study design:

A descriptive research design was used to conduct this study.

Setting:

The study was **carried out** in four rural health care units, Kharseet and Kafer-Essam health care units at Tanta first sector as well as Seberbay and shebsheer El-Hesa health units at Tanta second sector.

Subjects: The study included a convenient sample of women who attended the above mentioned health care units during the period from 14/6/2015 to 14/1/2016. These centers were approached three days/week; the total number of women interviewed by the researchers is 700 women. Of those 70 women were contacted for the pilot study and 30 women refused to participate in this study or incompatible to the study criteria. The rest (600 women) was eligible for being recruited in the study sample according to the following criteria:

Married and fertile women

15-50 years of age

Free from medical problems

Free from the major surgical operations

Willing to participate in this study

Tools of data collection: - A structured interview sheet was designed to collect the required data regarding the study elements. It included the following parts:-

Part one:

Socio-demographic characteristics of the women such as age, education, job, husband's education and his job, number of children, age at marriage and the marital duration.

Part two:

Menstrual and obstetrical history includes questions related to:-

a- Menstrual history such as: (age of menarche, duration of menstrual period, frequency and rhythm of menstrual cycle).

b- Obstetrical history such as (gravidity, parity, mode of delivery, number of still birth and abortion).

Part three*:*

- questions related to **contraceptive methods utilized by the women** such as: (the previous contraceptive methods used by the women and factors affecting their utilization, Current contraceptive methods and the factors affecting their current utilization and the source of women

knowledge regarding contraceptive methods).

Method

-Official letter clarifying the purpose of the study was obtained from the Faculty of Nursing and was submitted to the responsible authorities of the selected setting for permission to carry out the study.

-Tool was developed after reviewing recent literature; it was tested for content and construct validity by three experts in the field of obstetrics and gynecological nursing.

-The suitable statistical test analysis was used for testing the reliability of the developed tool.

-Ethical consideration: all participants were informed about the purpose of the study, confidentiality of information; right to withdraw from the study at any time. Consent from participants was taken orally.

-Pilot study was done on 10% of the sample from the previously mentioned setting to test the clarity, feasibility and applicability of the tool. It was re-modified and made ready for use. The data obtained was excluded from the study

-The present study was conducted in twenty eight weeks; seven weeks in each health center, three days/week, and seven to eight women were interviewed daily, so the total number of women from each center was 150 women who were accepted to participate in the study.

-The structured interview questionnaire was conducted individually for each woman to collect the required data.

-The collected data was organized, coded, analyzed and tabulated to determine the factors affecting the utilization of contraceptive methods among women living in rural areas of Tanta City.

Statistical analysis: Data was collected, coded and organized into tables, and then analyzed using the statistical package for social science (SPSS). Descriptive measures, including frequency, percentage, arithmetic mean and standard deviation were presented. ANOVA test were used for statistical correlation. P value was statistically significant at level 0.05%. Ranking of obstacles was also done.

Result :

Table (1): Presents the distribution of the studied participants according to their socio -demographic characteristics. Women's age ranged between 15 to 50 years old, nearly two thirds of them (66.2%) aged 25-34, more than two fifth of had secondary education and the majority of them were housewives (71.2%). Meanwhile, nearly half (49%) of their

husbands had university education and the majority of them were professional, 60% of them were married at the age of 21-25 years old, with a duration of marriage between 1-5 years (46.2%), and more than one third of them (35.8) had two children.

Table (2): Concerning women menstrual history more than half (54.8%) of the participants had their menarche started between 9 to14 years old and the majority of them had normal menstrual characteristics in relation to its duration, frequency, and regular rhythm. The table also shows that more than one quarter of participants had gravida two & one parity. Moreover, more than three quarter (77.3%) of had no history of abortion and 63.2% of them delivered by cesarean section.

Table (3): The majority of women had previous history of utilization of contraceptive methods (83.3%) and almost three quarters (74%) currently use contraceptive methods. As regard the reason for using the previous contraceptive method, more than half (59.5%) of them said that it was easy to use, on the other hand more than one quarter (29.8%) of them said that it led to minimal side effects, The inconveniency of previous family planning method was the main reason for changing it among more than three quarters (78.7) of the participants. As regard the barriers of using currently contraceptive methods; the table shows that nearly tenth (8.8%) of studied women explained that the main reason was their husbands refusal. Two fifth of them (40.3%) said that their duration of using contraceptive methods were less than 6 month. In relation to reasons for using contraceptive methods, the table also detected that 54.5% of the studied women said that it was easy to use.

Table (4): Shows the distribution of the studied participants in relation to the main source of information about contraceptive methods. It shows that more than half (54.2%) of studied participants gained their knowledge from physician, and 18.2%, 15.8% respectively gained their knowledge from neighbors and hospital staff.

Table (5): Presents distribution of the studied participants in relation to previous and current contraceptive methods. It was observed three fifths (60 %) of them using IUD's as a previous method of contraception and nearly three quarter of them using IUD's as a current method of contraception. This table also shows that 13.2% & 10.8% respectively of the studied women were used pills as a previous and current method of contraception, the table also shows that 11.0% & 3.3% of them used male condom as previous and current method of contraception, followed by 5.2

% & 4.5% were used injectable methods as previous and current method of contraception.

Table (6): Shows distribution of studied participants regarding factors affecting choice of intra uterine devices for contraception. It was revealed that no significant difference between who use and who don't use IUD's according to age (P= 0.443). In relation to educational level, it was revealed that nearly two third (62.5) of studies participants have university education using IUD's with significant difference between them (P= 0.001). According to duration of marriage in years, the same table also detected that more than two third (67.9) who use IUD's their duration of marriage was 6-10 years with significant differences between them and who don't use IUD's. Also, there was significant difference between the number of children and using IUD's, about two third (61.9%) of studied participants have two children using IUD'S (P= 0.001).

Table (1): Socio-demographic characteristics of studied participants

Variables	Number (n=600)	%
Age in year:		
15-24	175	29.2
25-34	397	66.2
35+	28	4.6
Educational level:		
Illiterate	22	3.7
Elementary	25	4.2
Preparatory	15	2.5
Secondary	267	44.5
University	256	42.7
Others	15	2.5
Occupation:		
Housewife	427	71.2
Non professional	126	21.0
Professional	35	5.8
Others	12	2.0
Husband education:		
Illiterate	29	4.8
Elementary	22	3.7
Preparatory	14	2.3
Secondary	223	37.2
University	294	49.0
Others	18	3.0
Husband's occupation:		
Non professional	103	17.2
Professional	479	79.8
Others	18	3.0
Age at marriage:		
15-20	220	36.7
21-25	362	60.3
26-30	18	3.0
Duration of marriage:		
1-5	277	46.2
6-10	184	30.7
11-15	54	9.0
16-20	31	5.2
>20	54	9.0
Number of children:		
1	165	27.5
2	215	35.8
3	195	32.5
>3	25	4.2

Table (2): Distribution of women according to their menstrual & obstetrical history

Variables	(n=600) N0	%
Age at menarche:		
9-14	329	54.8
15-19	257	42.8
20+	14	2.3
Duration of menstrual period "days"		
3-5	490	81.7
6-8	110	18.3
Frequency of menstrual cycle in "days"		
15	11	1.8

28	505	84.2
30	45	7.5
>30	39	6.5
Rhythm of menstrual cycle:		
Regular	526	87.7
Irregular	74	12.3
Gravidity:		
0	83	13.8
1	153	25.5
2	184	30.7
3	124	20.7
>3	56	9.3
Parity:		
0	92	15.3
1	171	28.5
2	163	27.2
3	153	25.5
>3	21	3.5
History of abortion:		
0	464	77.3
1	84	14.0
2+	52	8.7
Mode of previous delivery:		
Spontaneous vaginal	123	20.5
Assisted vaginal	98	16.3
Caesarean	379	63.2

Table (3): Distribution of studied participants according to their utilization of contraceptive methods

Variables	Number (n=600)	%
Ever used family planning methods	500	83.3
Reason for using the previous family planning method:		
Don't know	32	5.3
Minimal side effects	179	29.8
Affordability	9	1.5
Convenient	23	3.8
Easy to use	357	59.5
Reasons for changing a family planning method		
Inconvenient	472	78.7
Side effects	48	8.0
Failure of method	59	9.8
Difficult to use	18	3.0
Costly	3	0.5
Currently using family planning methods	444	74.0

Barriers for using family planning methods:		
Old age	42	6.0
Cultural constraints	15	2.5
Religious believes	3	0.5
Husband refusal	53	8.8
Not aware	21	3.5
Past experience of failure of a method or side effects	2	0.3
Don't have time	9	1.5
Want to get pregnant	11	1.8
Duration of using family planning methods:		
<6 months	242	40.3
6-11 months	80	13.3
1-2 years	230	38.3
>2 years	48	8.0
Reasons for using current family planning method:		
Minimal side effects	243	40.5
Affordability	12	2.0
Convenient	18	3.0
Easy to use	327	54.5

Total is not exclusive

Table (4): Distribution of studied participants in relation to the main source of information about contraceptive methods

Source of information	Number (n=600)	%
Physicians	325	54.2
Mass media	34	5.7
Friends and relatives	8	1.3
Books and magazines	11	1.8
Teachers	9	1.5
Neighbors	109	18.2
Hospital staff	95	15.8
Others	9	1.5

total is exclusive

Table (5): Distribution of studied participants in relation to previous and current contraceptive methods used.

Contraceptive methods	Previous method		Current method	
	N 500	%	N 444	%
Periodic abstinence	3	0.6	0	0.0
Withdrawal	0	0.0	0	0.0
Lactation amenorrhea	0	0.0	0	0.0
Male condom	55	11.0	15	3.4

Female condom	10	2.0	6	1.4
Diaphragm or cervical cap	37	7.4	15	3.4
IUDs	300	60.0	328	73.8
Pills	66	13.2	48	10.8
Injection	26	5.2	20	4.5
Implants	0	0.0	9	2.0
Surgical methods	0	0.0	0	0.0
Traditional methods	3	0.6	3	0.7

Table (6): Distribution of studied participants regarding factors affecting the using of intra uterine devices for contraception

Variables	Not using IUD's N 270		Using IUD's N 330		X^2	P
	N	%	n	%		
Age in years:						
<25	83	47.4	92	52.6	0.589	0.443
≥25	187	44.0	238	56.0		
Educational level:						
Less than university	129	37.5	115	44.9	18.324	0.001*
University	141	55.1	215	62.5		
Duration of marriage in years:						
1-5	154	55.6	123	44.4		
6-10	59	32.1	125	67.9	25.899	0.001*
>10	57	41.0	82	59.0		
Number of children:						
1	96	58.2	69	41.8		
2	82	38.1	133	61.9	16.572	0.001*
≥3	92	41.8	128	58.2		

*Significant

Discussion

Many developing countries are characterized by rapid population growth that is partly attributed to high fertility rate, high birth rates accompanied by high declining mortality rate, low contraceptive prevalence rate [19]. It is estimated that globally 222 million women in developing countries would like to delay or stop childbearing but do not use any method of contraception. The main reasons for this disparity include limited choice of methods, limited access to contraception, fear or experience of side effects, cultural or religious opposition, poor quality of available services, and gender-based barriers [20]. Promotion of contraception and ensuring access to contraceptive methods for women and couples is essential to securing the well-being and autonomy of women and development of communities [21].

This study was conducted to determine the utilization of contraceptive methods among women living in rural areas of Tanta city. This study revealed that the highest incidence of studied participants ever and currently have used contraceptive methods. This result was supported by Bader et.al. (2013) who reported that more than eight in ten women are currently using a contraceptive methods (82.9%). While Elzanaty & Way (2009) found 60% of married women in Egypt are using contraceptive methods [22, 23]. From the researcher point of view, this increase in using contraceptive methods in the present study may be due to low socioeconomic stander and increase awareness of women regarding the benefits of small families.

Concerning to the barriers of using contraceptive methods the present study found that husband's refusal was the most common barriers for using contraceptive methods. This result agrees with Olugbenga-Bello A et al.,(2011) who found that the main reason for non- using contraception was husbands' disapproval of using contraceptive methods [24] . On the other hand this result contradicted with Bader et.al. (2013) and Arbab et al., (2008) who reported that the desire to have more children was the most common cause of not using a contraceptive methods [22,25] . Also another studies done by El-Reffay 2004, Okluna et al., (2006), and Elshishiny R., et al., (2015) found that the desire to become pregnant was the most common reason of not using a contraceptive methods [26,27,28] .

As regard the main source of information about contraceptive methods, the present study denoted that more than half of the studied participants their source of

information was physicians and more than tenth of them from neighbors and hospital staff respectively. This result in line with El Shishiny R., et al. (2015) who reported that 58% of the individuals gained knowledge of contraception from primary healthcare facilities (family planning clinic and family health unit) [28]. Also, this result is compatible with Olugbenga Bello A et al., (2011) who noticed that the majority of the women source of information was mainly from health personnel [24].

In relation to previous and current contraceptive methods used by studied participants, the result of the present study stated that IUD's was the most previous and current contraceptive methods used by studied participants followed by pills, male condom then injection. From the researcher point of view, these results are due to the encouragement of the Egyptian state policy for using these methods of contraception plus it was accepted and preferable among Egyptian women. This result conform with Badr et al.,(2013) who reported that the IUD's was the most widely methods used by the studied women representing about two thirds, followed by pills which represent more than half of them, then injection which represents more than one third, and nearly one quarter used male condom, also the present result contrast with El-Zanaty & Way (2009) who found that IUD's was the most widely accepted method of studied women in their lives, they also reported that thirty-seven percent of women have ever used the pills, while about one fifth have ever used injection [22,23].

Regarding the reason for using of the previous and current contraceptive methods. The present study detected that the main reason set for using contraceptive methods was that it was easy to use and had minimal side effects, this result contradict with Olugbenga et al., (2011) who stated that the main reason for using contraceptive methods was as a result for its affordability and availability [24] .

In relation to factors affecting the using of IUD's. The present study revealed that no significant differences between those who use and who don't use IUD's and their age. From the researcher point of view that the studied participants in the present study have close ages. This result conflicts with Osmani A et al., (2015) who showed that there was strong statistically significantly increase between contraceptive use and women's age. The low contraceptive use among women aged less than 20 years may be due to the fact that most of women in this age group are newly married and have interest in having

children. Considerable increase of contraceptive use from age of 25 to 44 years indicated that the majority of women reached their desired number of children and then chose to avoid pregnancy by using modern contraceptive methods [21].

As expected, In relation to educational level, this study represents that there was a highly statistically significant relation between educational level and using IUD's. This result was expected because nearly two thirds of the studied women had university education which increases their chance for gaining information regarding contraceptive methods. This result agreed with Osmani et al., (2015) who found that the relationship between education and contraceptive use was strong. In general, current use of contraception progressively increased with increasing female education. This may be because educated women had better access to health facilities and information about contraception [21]. The contraceptive use increases gradually with household wealth status that has several possible explanations. For example, the wealth variable was an aggregate index of assets, with many having assets such cellphones, radios, televisions, motorbikes, cars, or bicycles, all of which can contribute to other important factors such as access to information and transport [29,30].

The present study shows that there is positively significant relation between number of children and the duration of marriage and the using of contraceptive methods. This result pointed that when women reach their wanted number of children within a reasonable time of marriage, they begin to use contraceptive methods to avoid pregnancy. This result is in agreement with Osmani A and et al (2015) who found that when the number of children increased, the number of women using contraception also relatively increased [21].

Conclusion: The present study concluded that IUD's and pills were the most common types of contraception methods previously and currently used by the studied women. There was positively significant relation between using IUD's among studied women and the educational level, duration of marriage in years and the number of their children. On the other hand there was negative relation between using IUD's among studied women and the age of women.

Recommendations: Further studies were needed to assess the prevalence of contraception used by Egyptian women in

the other rural and urban areas**.** Educational programs should be provided to the women regarding the different types of male and female contraceptive methods.

REFERENCES

1- Khamis S. Multiple Meanings, Identities, and Resistances: Egyptian Rural Women's Readings of Televised Family Planning Campaigns. International Journal of Communication 2009; 3, 443-490,

2-Crumley S., Factors that affect family planning, http://www.livestrong.com /article/89818-factors-affect-family-planning/; Updated November 2, 2013; accessed 9th May 2015.

3-Tamrakar A. Textbook of Gynecology for Nurses, 1st ed; London; Jaypee Brothers Medical Co., 2014;482-483,

4-Abdel Hafez A., Factors affecting the family planning methods used by the currently married women in rural Egypt, American journal of research communication, 2014;2(10): 324-341,. www.usa-journals.com, ISSN: 2325-4076.

5-USAID, Family planning and Reproductive Health, http://www.usaid .gov/what-we-do/global-health/family-planning/; updated April 13, 2015; accessed 15th May 2015.

6-Ashford L. Unmet need for family planning: Recent trends and their implications for programs; Washington DC, Population Reference Bureau, February, 2003 http://www.prb.org /pdf/UnmetNeedFam- Plan-Eng.pdf; accessed 10th May 2015.

7-Eltomy E., Saboula N., Hussein A., Barriers affecting utilization of family planning services among rural Egyptian women. EMHJ,2013; 19 (5): 400

8-Egypt Demographic and Health Survey (DHS) program. Ministry of Health and Population Family planning in Egypt. accessed 14th May 2015.

9-Yeakey M., Muntifering C., Ramachandran D., Myint Y., Creanga A., Tsui A., How contraceptive use affects birth intervals: results of a literature review. Stud Fam Plann.2009; 40(3): 205-14.

10-Vaughan B., Trussell J., Kost K., Singh S., Jones R., Discontinuation and resumption of contraceptive use: results from the 2002 National Survey of Family Growth Contraception. 2008;78(4): 271-83

11- Ibrahim H., Contraception Use among Egyptian Women: Results from Egypt Demographic and Health Survey in 2005. J Reprod Infertil. 2012;13(3):167-173

12-Abasiattai A., Bassey E., Udoma E., Profile of intrauterine contraceptive device acceptors at the University of

Uyo Teaching Hospital, Uyo, Nigeria. Ann Afr Med. 2008;7(1):1-5,

13-Umbeli T., Mukhtar A., Abusalab M., Study of unmet need for family planning in Dar Assalam, Sudan 2001. East Mediterr Health J 2005; 11:594-600

14- Tawfik T., Trend and Pattern of Use and Barriers to Family Planning in Egypt. International Public Health Forum., 2014; 1(4):23-30 http://www. researchpub.org/journal/iphf/iphf.html

15-The DHS program, Family planning, http://dhsprogram.com/topics/family-planning. accessed 17th May 2015.

16-Ladewig P., London M., Davidson M., Contemporary Maternal-Newborn Nursing Care, 8th ed; USA, Pearson edu Inc, 2014;71, 80.

17-Campbell M., Nalan N., Potts M., Barriers to fertility regulation: review of the literature.2006; 37(2):87-98,

18-Undelikwo V., Osanwa O., Ushie M., Osanwa R., Family Planning Behaviours and Decision Making Among Couples in Cross River State Nigeria, international journal of learning and development ISSN 2013;3(1): 2164-4063, 100-101.

19- Okech T., Wawire N., and Mburu T. Contraceptive Use among Women of Reproductive Age in Kenya's City Slums. International Journal of Business and Social Science.2011; 2(1): 5

20- World Health Organization. The Family Planning Fact Sheet 2013. WHO, Geneva.

21-Osmani A., Reyer J., Ahm and Nobuyuki H. Factors influencing contraceptive use among women in Afghanistan: secondary analysis of Afghanistan. Health Survey 2012. Nagoya J. Med. Sci. 77. 551 - 561, 2015

22-Badr M. et al. The Contraceptive Knowledge and Use among Women Attending Primary Health Care Centers of Al Dawahe District in Port Said Governorate. Med. J. Cairo Univ.2013; 81(2):137-142

23-EL Zanaty F. and WAY A.: Egypt demographic and health survey 2008. Cairo Egypt Ministry of Health and Population, National Population Council, El-Zanaty and Associates, Family planning. 2009.

24-Olugbenga-bello A.1., Abodunrin O.L. and AdeomI A.A.: Contraceptive Practices among Women in Rural Communities in South-Western Nigeria. Global Journal of Medical Research2011; 11 (2): 9.

25-Arbab A.A., Bener A. and Abdulmalik M.: Prevalence, awareness and

determinants of contraceptive use in Qatari women. Eastern Mediterranean Health Journal2011; 17 (1): 11-8.

26-EL Refaay S.: Study of knowledge, attitude and use of family planning methods at Kariet Amer in Suez governorate, Faculty of Medicine, Suez Canal University, Egypt, 2004.

27-Okunlola M.A., Owonikoko K.M., Roberts O.A. and Morhason-Bello 1.0.: Discontinuation pattern among IUD'S users at the family planning clinic,. University College Hospital, Madan. J. Obstet. Gynaecol.2006; 26 (2): 152-6,

28-El Shishiny R., et al. Evaluation of family planning services in a rural area in Al-Shohdaa district, Menoufiya governorate. Menoufia Medical Journal2015; 28:650–656.

29- Alpu O, Fidan H. On the use of contraceptive method among married women in Turkey. Eur J Contraceptive Reprod Health Care, 2006.

11: 228–236; 30-Martin E, Palamuleni. Socioeconomic and demographic factors affecting contractive use in Malawi. Afr J Reprod Health, 2013.17: 91–104;

Educational Management Program on Enforcement Autonomous Decision Making among Novice Graduate Nurses

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Abstract

Background: autonomous decision making (DM) is a positive concept for novice graduate nurses (NGNs) influencing job satisfaction, retention and quality of care. They have to exercise judgments and DM skills through learning DM process to act independently and autonomously. **Aim:** to assess, design, implement, and evaluate an enforcement educational management program on autonomous clinical and managerial decision making for novice graduate nurses. **Setting:** study was conducted at Tanta University and El Menshawy Hospital. **Subjects:** all (90) novice graduate nurses working in above mentioned setting. **Tools:** Three tools were used including decision making autonomy assessment scale, decision making and principles of autonomy knowledge test and educational enforcement program on decision making and autonomy principles. **Results:** Pre programs, all NGNs have low level of DM autonomy in clinical and managerial decisions and had poor level of knowledge about DM autonomy principles. Post program, (95.5%) of NGNs had good level of knowledge. NGNs (12.3% and 24.4%) had moderate level of managerial and clinical DM autonomy respectively. **Conclusion**: NGNs at two hospitals not having the authority and autonomy for making clinical and managerial decisions. Additionally, had lacking knowledge about decision making autonomy principles and facing organizational obstacles that limit their autonomy in DM. Post program, NGNs' knowledge and skills about autonomous DM improved. **Recommendations:** updating the structure of NGNs' job description including their involvement in decision making. Stress active managerial support to NGNs to improve their decision-making skills and become independent in clinical and managerial decisions.

Introduction

Novice graduate nurses (NGNs) are baccalaureate prepared registered nurses with less than three full years of experience in the profession [1,2]. Technology and research advances, greater workloads, diminishing resources, and complexity of nursing care requirement overwhelm novice graduate nurses [3,4]. All of these phenomena increased the challenge for decision making by nurses [5]. For novices, this challenge is even greater and call for effective, independent, and competent decision maker [6] .To assume new and independent roles in their practice NGNs need to develop their abilities to problem solving, making decisions, acting independently to function and decide safely [7].

Basically, novice graduate nurses (NGNs) as professionals are accountable for patients with more complex care require close observation and specialized treatment [8]. They face legal, complex, and educational problems dictate the demand for professionally prepared autonomous nurses to fulfill their professional role and move the profession forward [9]. Although nurse specialists expected to make independent clinical and managerial decisions, Eid (2009) [10] revealed that nurses specialist not have the authority and autonomy in making decisions that govern nursing practice and practice environment. Absence of educational program to support their decision making skills was the first managerial barriers for their decisional involvement.

Autonomous decision making considered an important element for novice nurses' professional identity and source of power in their clinical practice [11-13]. Autonomous decision making not involve the exercise of routine tasks or the unquestioning enactment of physician orders [14]. For novice nurses, autonomous decision making means acting and decide independently without being restricted by bureaucratic rules of hospitals and receiving orders or permission from others based on complex body of knowledge and skills [15,16]. Autonomy is an essential attribute for achieving professional status by using the power to determine what needs to be done in providing patient care, to act on assessments and to accept accountability for independent decisions [17]. It manifested through communication of mutual respect and trust both intra and interprofessionally in clinical settings [18]. Autonomy in clinical and managerial decisions is required by NGNs when assessing the information about patient needs, putting nursing diagnose and judgment about the patient's health

problems. Adding that, when deriving the outcomes of nursing care provided, developing and planning the nursing procedures, implementing the plan of care and evaluating the care provided against the standard of care [19-21]. Variety of independent managerial decisions needed about resources affecting patient care including staffing, budgeting, equipment, supplies, time, and patient assignment to staff. Moreover, planning, organizing, collaboration, and quality of professional practice decisions [22, 23].

The nature of novice nurses' clinical decision making is linear, based on limited knowledge and experience in the profession and focused on single tasks or problems [5,24,25]. They tend to view decision making as responding to patient complaints, and following protocols or documented care plans. As they make decisions; their focus leans toward doing, rather than on thinking and reflecting, make them rely excessively on more experienced nurses and avoid situations that require them to make decisions [26]. Consequently, the Institute of Medicine (2008) [27] stressed that a higher level of clinical decision making autonomy have to be given to NGNs and that they be trusted and supported to make autonomous decisions about patient's care and unit operations.

To deal with these concerns NGNs need to be enforced to be autonomous decision maker [28]. They need to be trained to incorporate an educational framework that supports their development. Prerequisite intellectual and cognitive skills are needed in order to manage complex information and to make judgments [29]. In addition, they need to be trained to exercise discretionary decision making by using the critical concise to select a course of action consistent with client and unit needs. Self direction and intellectual flexibility are required to negotiate and compromise [18].

Enforcement of educational management program on autonomous decision making for NGNs is very important to teach them how to make effective decisions by investing their knowledge about decision making process and supporting them in both successful and unsuccessful decisions for increasing their autonomy and control over nursing practice. Designing and implementing program for novice graduate nurses they will become autonomous, they will able to choose a specific course to respond to both the problem and the opportunities that confront them, make judgments about the care that they provide to patients and management issues [30].

Aim of the study: Assess, design, implement, and evaluate an enforcement educational management program on

autonomous clinical and managerial decision making for novice nurses.

Research hypothesis: Improvement of knowledge and skills of autonomous decision making among novice graduate nurses.

Materials and Method

Material

Study design: Quasi experimental research design was used to achieve the aim of present study. Such design fits the nature of the problem under investigation.

Setting: The study was conducted at Tanta University Hospitals and El Menshawy Hospital. **Subject:** The study subjects consisted of all (90) novice graduate nurses up to 3 years of experience at Tanta University Hospital and El Menshawy Hospital. The subject was 25 novice graduate nurses at Tanta University Hospital and 65 at El Menshawy Hospital.

Tools: To achieve the aim of the study the following tools were used.

Tool I: Decision making autonomy assessment scale consisted of three parts:

Part (1): Characteristics of subject such hospital name, age, years of experience, unit name and marital status.

Part (2): Decision making autonomy assessment questionnaire contained clinical and managerial decisions subscale.

a) Clinical decisions subscale was used to assess novice gradate nurses' autonomy in clinical decisions, it consisted of 34 items divided into clinical decision in patient assessment, nursing diagnosis outcome identification, care planning, care implementation and care evaluation. **b**) Managerial decisions subscale was used to assess novice gradate nurses' autonomy in managerial decisions. It consisted of 38 items divided into managerial decisions related to quality of professional practice, quality of support staff practice, professional nursing staff development, collaboration, unit governance and leadership decisions, unit staffing decisions, planning, and organizing the work unit decisions. The response for questionnaire was measured by 3 points scaling as follows:-

Never =1 Rarely =2 Always =3

Part (3): Modified organizational obstacles for autonomy in making clinical and managerial decision making (19) questions related to general organizational and managerial support obstacles affect novice graduate nurses autonomy in making their decisions. The responses for questionnaire was measured on three points likert scaling ranging from (3) strongly agree to (1) disagree. Levels of response were high, moderate and low.

Tool II: Decision making and principles of autonomy knowledge test. It consisted

of 66 questions in forms of true &false (32 items), multiple choice (28 items) and apply (6 items). These questions were classified into 5 categories. Items related to decision making basic concepts and IDEALS model, items related to autonomy principles and its dimensions, items related to autonomous nursing practice and characteristics of autonomous nurse, items related to implementation of decision making process, and items related to organizational obstacles for novice graduate nurses' decision making autonomy. Each item of the knowledge test was allotted score of (1) for correct answer and (0) for wrong answer. Level of novice graduate nurses' knowledge was as follows:

- Low level knowledge < 60% of total scores.
- Fair level knowledge = 60% -<80% of total scores
- High level knowledge >80% of total scores.

Method:

* An official permission was sent for responsible authorities at two hospitals (Tanta University Hospitals and El Menshawy Hospital) to obtain the approval and assistance in data collection.

* Tool I & II were presented to a jury of 7 experts in nursing administration to check content validity of its items. The experts responses were represented in four points rating score ranging from (4-1); 4= strongly relevant, 3= relevant, 2= not relevant, and 1= strongly not relevant. Necessary modifications were done, included clarification, omissions of certain questions and adding others. The content validity was 94% for novice graduate nurses' decision making autonomy in clinical and managerial decisions and 95.5% for decision making autonomy obstacles.

*** Ethical consideration:** Nurses consent to participate in the study was obtained (nurses were informed about the privacy of information obtained from them, nature of the study, their rights to withdraw, and the confidentiality of their names).

* A pilot study was conducted on ten novice graduate nurses. They are randomly selected from the two hospitals and excluded from the sample. The first time implemented after the development of the tools and second time implemented before starting the actual data collection to test the clarity of its items, applicability, and relevance of the questions. The administration time for filling questionnaire sheet was approximately 30 minutes for assessment tool (I) and approximately 45 minute for knowledge

test tool (II). Reliability of tools was 0.824 for clinical and managerial decision making autonomy, and .816 for obstacles for novice nurses' decision making autonomy.

*** Data collection phase:** assessment sheet was distributed by researcher to all novice nurses in two hospitals to assess novice gradate nurses' autonomy in clinical and managerial decisions and assess obstacles affect their autonomy in making their decisions. The appropriate time for data collection was according to workload of each unit. .....

* **Development of the enforcement educational program.**

Educational enforcement program on decision making and autonomy principles was developed by the researcher based on review of relevant recent literature and results of novice graduate nurses' knowledge test scores on decision making and autonomy principles and decision making autonomy scale responses.

The first step in the construction of this program was the statement of general and specific instructional objectives.

General instructional objectives

The main objectives of the program is to enforce novice graduate nurses with knowledge and skills about decision making and autonomy principles to be able to make clinical and managerial autonomous decisions.

Selection and organization of program content

After determining the objectives of program, the content was specifically designed, method of teaching, and evaluation was identified. Simple scientific language was used. The content designed to provide knowledge and skills related to decision making and autonomy principles. The program contents included 5 sessions about:

1- Decision making basic concepts and IDEALS model developed by Facione (2006) [31].
2- Autonomy principles and dimensions.
3- Autonomous nursing practice and characteristics of autonomous nurse.
4- Examples of clinical situations to train the novice graduate nurses how to implement the decision making process and make better clinical and managerial decision.
5- Organizational obstacles for novice decision making autonomy.

Teaching- learning g strategies

Selection of teaching method was governed by studying the subjects themselves and content of the program. The methods used were lecture, group discussion, case study and examples from

work situations.

Teaching aids

The teaching aids used in the program were data show, flow sheet handouts, pen and papers.

Implementation of the program

- The study was carried on 90 novice graduate nurses. Novice graduate nurses will be divided into ten groups. The program time was 10 hours for each group. One session every day for 5 days, every session2 hours. They preferred to start the session after finishing necessary work at 11 a.m -1 p.m.
- The program theoretical sessions were held in the conference room and head nurse room at El Menshawy Hospital and in wards at Tanta University Hospitals.
- The novice graduate nurses were informed about the general instructional objectives of program and of each session. The researcher builds good relationship and gave a simple form of motivation to enhance their participation and more involvement in the program activities.

Evaluation of the program

The program was evaluated using the decision making and autonomy principles knowledge test as follows;

a- Pre implementation of the program pre-testing of novice nurses' level of knowledge.

b- Post testing novice graduate nurses level of knowledge immediately after implementation of the program.

c- Difference in level of autonomy of decision making using tool (1).

* The duration of data collection about 12 months.

Statistical analysis

The collected data were organized, tabulated and statistically analyzed using SPSS software version 16.

For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, comparison between two groups and more was done using Chi-square test (χ^2) and Fisher Exact test (FE).

Results

Table (1) shows characteristics of novice graduate nurses (NGNs). The age of novice graduate nurses were ranged from 24-27 years, with mean age 25.10$\pm$0.90. High percent (67.8%) of novice graduate nurses were in the age group 24-25 years, and the rest (32.2%) were in the age group 26-27 years.

High percent (72.22%) of NGNs were worked in El Menshawy Hospital and

(27.78%) worked at Tanta University Hospitals.

Equal percent (47.8%) of NGNs were married and single. Their mean years of experience were 1.46±0.86. Over forty percent (46.7%) of NGNs get very good in graduation level, (37.8%) their grades were good, and (15.6%) their grades were excellent. No one of them attend any educational programs about decision making.

Table (2) represents correlation between scores of clinical and managerial decision making autonomy, scores of organizational obstacles of decision making autonomy and total knowledge score of novice nurses' pre program implementation. Total scores of autonomy in making clinical & managerial decisions differ statistically significant according to NGNs' age and years of experience at (P=0.0001), Moreover, statistical significant correlation found between total scores of autonomy in clinical & managerial decisions and scores of general organizational obstacles of decision making autonomy at (P=0.0001). Statistical significant correlation between total scores of autonomy in managerial decisions and scores of managerial support obstacles of decision making autonomy at (P=0.0001), Besides that, total knowledge scores have statistical significant effect on NGNs' autonomy in making clinical and managerial decisions at (P=0.0001).

Figure (1) shows levels of novice nurses' total knowledge pre and post program implementation. Pre program, no one of novice nurses had good level of knowledge compared to post program, most of them were at good level of knowledge.

Table (3) represent difference between mean percent of improvement of novice graduate nurses' knowledge about decision making and principles of autonomy at Tanta University and El Menshawy hospitals post than pre program implementation. The table shows significant improvement of novice nurses' knowledge at two hospitals post than pre program implementation at (p=0.018). Mean percent of improvement was 250.26%±76.67 at Tanta university hospitals while 208.41%±58.85 at El Menshawy hospital.

Figure (2) shows novice graduate nurses' level of actual managerial decision making autonomy pre and post program implementation. Pre program, none of novice nurses had high or moderate level compared to few of them post program had moderate level of managerial decision making autonomy.

Figure (3) shows novice nurses' levels of

actual total clinical decision making autonomy pre and post program implementation. Pre program, none of novice nurses had high or moderate level of clinical decision making autonomy compared to about quarter of them post program had moderate level of clinical decision making autonomy.

Table (4) represents mean scores of organizational obstacles for novice nurses' decision making autonomy at Tanta University hospitals pre and post program implementation. Pre program, item of ""physician only take decision making" was ranked the first general organizational obstacle for NGNs' decision making autonomy with mean score 2.80±0.41 while the item of "increase in non nursing duties" was ranked the least obstacle with mean score 1.20±0.41. Item of "absence of educational program to support decision making skills" was ranked the first managerial support obstacle for NGNs' decision making autonomy with mean score 2.84± 0.41 while the item of "nurse manager transfer you suddenly without preparation" was ranked the least obstacle with mean score 1.00±0.00.

Total rank pre program showed that items of "absence of educational program to support decision making skills " , "physician only take decision making" , "nurse manager only retain the responsibility for decision making", and "no support from nurse manager when any problem happen" were ranked 1,2,3,4 organizational obstacles that limit NGNs' decision making autonomy with mean score >2. However, item of "nurse manager transfer you suddenly without preparation" was the least obstacle for NGNs' decision making autonomy with mean score =1.

Post program, item of "physician only take decision making" was the first general organizational obstacle for novice nurses' decision making autonomy with mean score 2.80±0.41, while item of "increase in non nursing duties" was the least obstacle with mean score 1.20+0.41. Item of "nurse manager only retain the responsibility for decision making" was the first managerial support obstacle for NGNs' decision making autonomy post program with mean score 2.80±0.41. While, item of "absence of educational program to support decision making skills" was the least obstacle with mean score =1.

Total rank post program showed that items of "physician only take decision making" , "nurse manager only retain the responsibility for decision making", "no support from nurse manager when any problem happen", and "no response from nurse manager to NGNs' problems" ranked1,2,3,4 organizational obstacles that

limit NGNs' decision making autonomy with mean score >2. However, item of "absence of educational program to support decision making skills" become the least obstacle for NGNs' decision making autonomy with mean score =1.

Table (5) represents mean scores of organizational obstacles for novice nurses' decision making autonomy at El Menshawy hospitals pre and post program implementation. Pre program, item of "lack of supplies and equipment in unit" was ranked the first general organizational obstacle for NGNs' decision making autonomy with mean score 2.31± 0.75. While item of "increase in non-nursing duties" was ranked the least obstacle with mean score 1.23±0.42. Item of "absence of educational program to support decision making skills" was ranked the first managerial support obstacles for NGNs' decision making autonomy with mean score 2.54± 0.50. While item of "nurse manager insist to heart you" ranked the least obstacle with mean score 1.00±0.00.

Total rank pre program showed that items of "absence of educational program to support decision making skills ", "nurse manager only retain the responsibility for decision making", " the way of nurse manager in conflict resolution is in equity" and "lack of supplies and equipment in the unit" were ranked 1,2,3,4 organizational obstacles that limit NGNs' decision making autonomy with mean score >2. However, item of "the nurse manager insist to heart novice nurses" was the least obstacle for NGNs' decision making autonomy with mean score =1.

Post program, item of "absence of rules that indicate the freedom in unit decision making" was the first general organizational obstacle for novice nurses' decision making autonomy with mean score 2.31±0.75, while item of "increase in non nursing duties" was the least obstacle with mean score 1.23+0.42. Item of "nurse manager only retain the responsibility for decision making" was the first managerial support obstacle for NGNs' decision making autonomy post program with mean score 2.54±0.50. While, item of "nurse manager insist to heart you" was the least obstacle with mean score =1.

Total rank post program showed that items of "nurse manager only retain the responsibility for decision making", "no response from nurse manager to NGNs' problems", " the way of nurse manager in conflict resolution is in equity" and "absence of rules that indicate the freedom in unit decisions " were ranked 1,2,3,4 organizational obstacles that limit NGNs' decision making autonomy with mean score >2. However, items of "nurse manager insist to heart you" and "absence

of educational program to support decision making skills" become the least obstacles for NGNs' decision making autonomy with mean score 1.00±0.00, 1.18±0.39 respectively.

Table (6) shows correlation between scores of clinical & managerial decision making autonomy and scores of organizational obstacles of decision making autonomy of novice nurses post program implementation**.** Significant correlation found between age & years of experience of novice nurses and total scores of autonomy in clinical & managerial decisions post program at ($p<0.05$). Also, significant correlation found between total scores of clinical decision making autonomy and total score of organizational obstacles to decision making autonomy at ($p<0.05$). Furthermore, the table shows significant effect of general organizational obstacles on clinical and managerial decision making autonomy. While, significant correlation found between total scores of managerial support obstacles and total scores of managerial decision making autonomy. Where managerial support obstacles had an effect on NGNs' managerial decision making autonomy

Table (1): Characteristics of novice graduate nurses (n=90).

Characteristics	The novice graduate nurses	
	No	%
Age		
24-25	61	67.8
26-27	29	32.2
Mean ±SD	25.10±0.90	
Hospital		
Tanta university hospitals	25	27.78
El Menshawy hospital	65	72.22
Department		
Anesthesia ICU	15	16.7
Neurology ICU	10	11.1
Medical ICU	15	16.7
Neonatal ICU	20	22.2
Cardiology ICU	11	12.2
Pediatric ICU	9	10.0
Renal Dialysis	10	11.1
Marital status		
Single	43	47.8
Married	43	47.8
widowed	4	4.4
Years of experience		
0.5-<2	67	74.4
2	8	8.9
3	15	16.7
Mean ±SD	1.46±0.86	
Graduation level		
Excellent	14	15.6
Very good	42	46.7
Good	34	37.8
Attendance of training programs about decision making		
Attend	0	-
Not attend	90	100

Table (2): Correlation between scores of clinical and managerial decision making autonomy and scores of organizational obstacles of decision making autonomy of novice nurses pre program implementation (n=90).

Variables	Novice graduate nurses (n=90)							
	Total scores of autonomy in making clinical decision		Total scores of autonomy in making managerial decision		Total scores of Obstacles to autonomy of decision making		Total knowledge scores	
	r	p	R	p	r	p	r	p
Age	0.749	0.0001*	0.591	0.0001*	0.143	0.180	0.017	0.875
Experience years	0.825	0.0001*	0.614	0.0001*	0.186	0.079	-0.030	0.777
Total scores of autonomy in making clinical decision	-	-	-	-	0.285	0.006*	-	-
Total scores of autonomy in making managerial decision	0.063	0.557	-	-	-0.173	0.102	-	-
Total scores of general organizational obstacles	0.628	0.0001*	0.237	0.024*	-	-	-0.086	0.418
Total scores of managerial support obstacles	0.163	0.125	-0.488	0.0001*	-	-	-0.145	0.172
Total knowledge scores	0.606	0.0001*	0.327	0.0001*	-0.150	0.158	-	-

***Significant (P<0.05)**

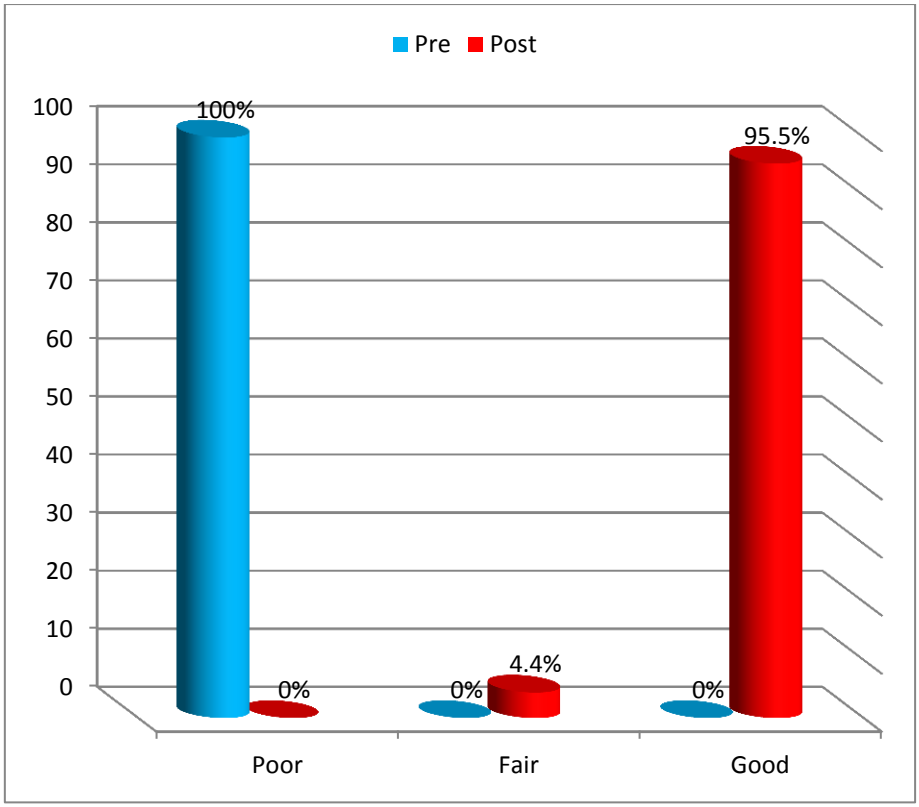

Figure (1): Levels of novice nurses' total knowledge pre and post program implementation (n=90).

Table (3): Difference between mean Percent of improvement of novice graduate nurses' knowledge about decision making and principles of autonomy at Tanta University and El Menshawy hospitals post than pre program implementation (n=90).

Knowledge subitems about decision making and principles of autonomy	Mean % of improvement of novice nurses' knowledge (n=90)			Z test P
	Tanta University hospital (n=25)	El Menshawy hospital (n=65)	Total (n=90)	
Basic concepts and IDEALS model of decision making.	211.03%±120.63	156.92%±90.49	172.12%±102.12	2.237 0.025*
Decision making autonomy principles and dimensions	190.83%±136.17	163.62%±114.73	171.18%±120.89	0.913 0.361
Autonomous nursing practice and characteristics of autonomous nurse	216.88%±139.17	134.44%±69.6	157.34%±100.44	2.839 0.005*
IDEALS model application in clinical practice of decision making	240.00%±73.54	615.33%±311.90	427.66±186.22	6.000 0.0001*
Organizational obstacles for novice decision making autonomy:	190.70%±138.80	256.63%±292.26	238.31%±259.80	0.641 0.522
Total Knowledge	**250.26%±76.67**	**208.41%±58.85**	**220.04%±66.56**	**2.374 0.018***

***Significant (P<0.05)**
Z test =Test of proportions

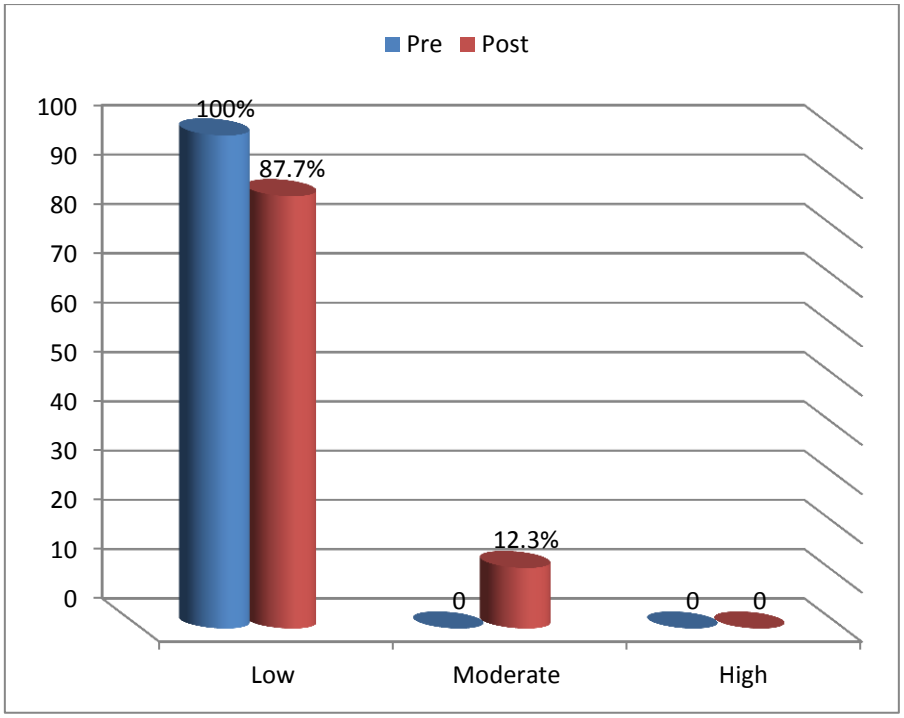

Figure (2): Novice nurses' levels of actual total managerial decision making autonomy pre and post program implementation (n= 90).

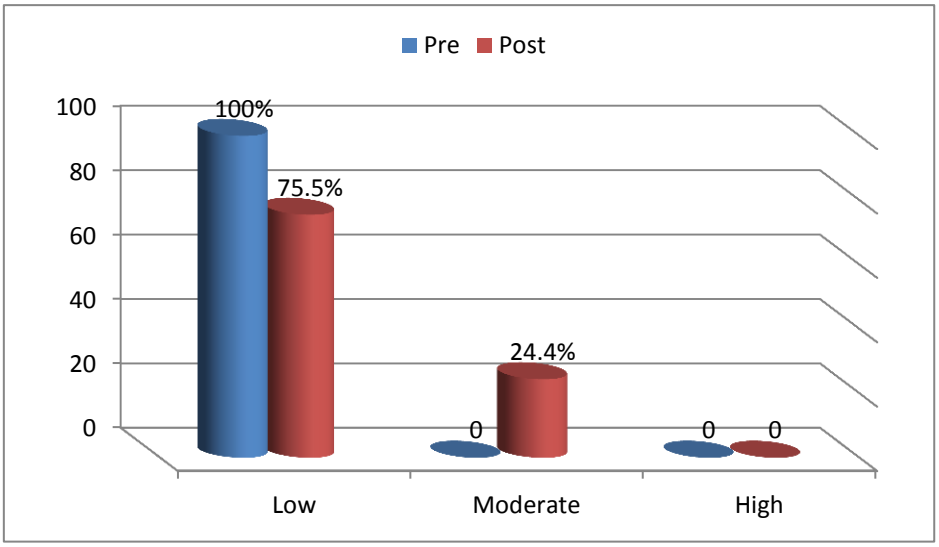

Figure (3): Novice nurses' levels of actual total clinical decision making autonomy pre and post-program implementation (n=90).

Table (4): Mean scores of organizational obstacles for novice nurses' decision making autonomy at Tanta University hospitals pre and post program implementation (n=25).

Organizational obstacles of decision making autonomy items			Mean score of organizational obstacles			
			Mean ±SD	Rank	Total rank pre	Total rank post
General organizational obstacles	Absence of rules that indicate the freedom in unit decision making,	Pre	1.40±0.50	6	15	13
		Post	1.56±0.51	5		
	Increasing the numbers of critical patients in the unit	Pre	1.56±0.51	5	13	11
		Post	1.64±0.86	3		
	Unclear work responsibilities to you	Pre	1.56±0.77	4	14	14
		Post	1.56±0.77	4		
	Lack of supplies and equipment to do the work	Pre	1.80±1.00	2	8	8
		Post	1.80±1.00	2		
	Shortage in nursing staff in the unit	Pre	1.64±0.86	3	11	15
		Post	1.40±0.50	6		
	Increase in non nursing duties	Pre	1.20±0.41	7	17	17
		Post	1.20±0.41	7		
	Physician only take decisions without your involvement	Pre	2.80±0.41	1	2	1
		Post	2.80±0.41	1		
Managerial support obstacles	No response from nurse manager to novice graduate nurses problems.	Pre	2.32±0.48	5	6	4
		Post	2.44±0.92	3		
	Absence of educational programs to support decision making skills.	Pre	2.80±0.41	1	1	19
		Post	1.00±0.00	12		
	Nurse manager transfer you suddenly from unit to unit without preparation.	Pre	1.00±0.00	12	19	18
		Post	1.12±0.33	11		
	Nurse manager only retains the responsibility for decision making.	Pre	2.76±0.43	2	3	2
		Post	2.80±0.41	1		
	Nurse manager refuses the head nurse decisions.	Pre	1.68±0.90	8	10	6
		Post	2.32±0.48	5		
	No support from nurse manager when any problems happen.	Pre	2.44±0.92	3	4	3
		Post	2.76±0.43	2		
	Nurse manager biased to some of you than others.	Pre	1.60±0.50	9	12	10
		Post	1.68±0.90	8		
	Nurse manager insist to heart you.	Pre	1.12±0.33	11	18	16
		Post	1.40±0.50	10		
	No encouragement of excellent nurses in the unit.	Pre	2.00±0.76	6	7	7
		Post	2.00±0.76	6		
	Nurse manager biased to guilty physician.	Pre	1.76±0.66	7	9	9
		Post	1.76±0.66	7		
	Nurse manager refuse to give your vacations when you need it.	Pre	1.40±0.50	10	16	12
		Post	1.60±0.50	9		
	The way of nurse manager in conflict resolution is inequity	Pre	2.40±0.50	4	5	5
		Post	2.40±0.50	4		

Table (5): Mean scores of organizational obstacles for novice nurses' decision making autonomy at El Menshawy hospital pre and post program implementation (n=65).

Organizational obstacles of decision making autonomy items			Mean score of organizational obstacles			
			Mean ±SD	Rank	Total rank pre	Total rank post
General organizational obstacles	Absence of rules that indicate the freedom in unit decision making,	Pre	1.35±0.48	5	15	4
		post	2.31±0.75	1		
	Increasing the numbers of critical patients in the unit	Pre	1.35±0.48	4	14	15
		post	1.35±0.48	5		
	Unclear work responsibilities to you	Pre	1.29±0.46	6	16	7
		post	1.66±0.75	2		
	Lack of supplies and equipment to do the work	Pre	2.31±0.75	1	4	14
		post	1.35±0.48	4		
	Shortage in nursing staff in the unit	Pre	1.37±0.72	3	13	16
		post	1.29±0.46	6		
	Increase in non nursing duties	Pre	1.23±0.42	7	17	17
		post	1.23±0.42	7		
	Physician only take decisions without your involvement	Pre	1.66±0.75	2	7	13
		post	1.37±0.72	3		
Managerial support obstacles	No response from nurse manager to novice graduate nurses problems.	Pre	2.23±0.55	4	5	2
		post	2.48±0.50	2		
	Absence of educational programs to support decision making skills.	Pre	2.54±0.50	1	1	18
		post	1.18±0.39	11		
	Nurse manager transfer you suddenly from unit to unit without preparation.	Pre	1.37±0.60	10	12	12
		post	1.37±0.60	10		
	Nurse manager only retains the responsibility for decision making.	Pre	2.48±0.50	2	2	1
		post	2.54±0.50	1		
	Nurse manager refuses the head nurse decisions.	Pre	1.38±0.49	9	11	6
		post	2.09±0.76	5		
	No support from nurse manager when any problems happen.	Pre	2.09±0.76	5	6	5
		post	2.23±0.55	4		
	Nurse manager biased to some of you than others.	Pre	1.55±0.50	7	9	9
		post	1.55±0.50	7		
	Nurse manager insist to heart you.	Pre	1.00±0.00	12	19	19
		post	1.00±0.00	12		
	No encouragement of excellent nurses in the unit.	Pre	1.58±0.50	6	8	8
		post	1.58±0.50	6		
	Nurse manager biased to guilty physician.	Pre	1.18±0.39	11	18	11
		post	1.38±0.49	9		
	Nurse manager refuse to give your vacations when you need it.	Pre	1.43±0.75	8	10	10
		post	1.43±0.75	8		
	The way of nurse manager in conflict resolution is inequity	Pre	2.40±0.49	3	3	3
		post	2.40±0.49	3		

Table (6): Correlation between scores of clinical and managerial decision making autonomy and scores of organizational obstacles of decision making autonomy of novice nurses post program implementation (n=90).

Variables	Novice nurses at Tanta University and El Menshawy hospitals post program implementation (n=90)							
	Total scores of autonomy in making clinical decision		Total scores of autonomy in making managerial decision		Total scores of Obstacles to autonomy of decision making		Total knowledge scores	
	r	p	r	p	r	p	r	p
Age	0.777	0.0001*	0.774	0.0001*	0.143	0.180	0.010	0.868
Experience years	0.706	0.0001*	0.595	0.0001*	0.186	0.079	-0.033	0.727
Total scores of autonomy in making clinical decision	-	-	-	-	0.350	0.002*	-	-
Total scores of autonomy in making managerial decision	0.676	0.0001*	-	-	-0.173	0.102	-	-
Total scores of general organizational obstacles	0.628	0.0001*	0.237	0.024*	-	-	-0.089	0.421
Total scores of managerial support obstacles	0.180	0.146	-0.488	0.0001*	-	-	-0.124	0.168
Total knowledge scores	0.074	0.615	0.1612	0.279	-0.141	0.161	-	-

***Significant (P<0.05)**

Discussion

Decision making autonomy is a basic benchmark of professionalism and tool for protecting and reinforcing the novice nurses' professional identity and status in nursing practice [32]. Assessment of novice graduate nurses' level of performance and knowledge about autonomy in clinical and managerial decisions making revealed that pre program , all novice nurses showed low level in making autonomous decisions and poor level of knowledge about principles of decision making autonomy. This might be explained by the fact that all novice nurses were young aged and not attended training programs about decision making. As well as the high percent of them their experience was less than two years. Beside the high level of obstacles they were facing either for managerial support or general organizational which limit their autonomy in decision making. Department for International Development (2010) [33] support present results and revealed that nurses have not any autonomy in decision making and not involved in any decisions affecting their practice. Also, Eid (2009) [10] support present study results and mentioned that nursing experience had an effect on nurses' decision making autonomy and that nurses need more autonomy in decisional involvement in their work setting.

Analysis of present study novice graduate nurses poor level of knowledge pre program revealed that they lack of sufficient knowledge about how to gather information for patient assessment, lack clinical judgment skills to expect potential health problems to make actual nursing diagnosis. They don't know how to decide plan of action to implement and evaluate the patient's status and can't evaluate the effectiveness of nursing care provided. This result indicates that those novice graduate nurses have minimum clinical experiences; they are beginning practice need training to increase their experience. Most probably the high professional registered nurse vacancy rates increased the pressure on novice nurse and induced them to work as soon as possible while still not prepared to handle patient care situations.

Amini et al (2015) [34] revealed that nurses in teaching hospitals have moderate professional decision making autonomy because they don't perceive enough power nor receive an adequate amount of managerial support and feel barriers in obtaining their rights and have lower legal authority in decision making as well as they clarified that decision making autonomy influenced by nurse's age and experience that makes their voice heard.

Shamsi and Akbari (2011) [35] support the finding and discussed the barriers to inability of staff nurses to make patient assessment, nursing diagnosis, care planning, implementation and evaluation are related to lack of experience, lack of trained nurses to do it, insufficient information and skills, lack of managerial support in implementing these decisions, lack of enough time and excessive number of patients which make the nurses unable to make these decisions independently. Novice graduate nurses are required to have strong knowledge base and integrate available evidence, clinical judgment, decision making and patient preference as they plan, implement, and evaluate patient care outcome [36].

Rafi and Hezaveh (2014) [37] assumed that one of the major problems of novice nurses is the lack of the necessary ability to act as administrator and coordinator of the care team in the various shifts. According to the current status of sever nursing shortage, the novice nurse forcefully became the shift manger and because of her lack of required competency and experience she involved trouble. These deficiencies are in the area of monitoring and controlling tasks, decision making, planning and prioritizing, coordination, accountability, unit governance, time management and delegating tasks. However, novice nurses' experiences three main themes "functional disability" includes complex and specialized skills; "communicative problems" includes communication with physician and colleagues, and "managerial challenges".

Novice nurses in present study face general organizational obstacles that limit their decision making autonomy and have statistically significant effect in making clinical and managerial decisions. At Tanta University hospital the first ranked obstacle was physicians make decisions without nurses' involvement. Physicians often serve as a dean and medical faculty hold higher posts and nurses under supervision of them. Furthermore, university hospitals are largest healthcare systems and have hierarchies that promote a top-down management system with many levels and nursing considered a lower position within the bureaucratic structure which lead to feeling impaired authority and powerless among nurses.

The same result found by Liu et al (2015) [38] reported that physician centered atmosphere in decision making, lack of care facility, structure of rules that determine limits of authority, unclear work responsibilities, shortage of nursing staff and heavy workload are important factors affecting nurses decision making

autonomy. Elizabeth and Maria et al (2015) [39] also support present study result and revealed lower level of nurse autonomy associated with lower perceived nurse - physician collaboration.

Der (2011) [40] suggests that to improve the relationships among novice nurses and physician various approaches are implemented. Unit based program to improve communication and use of multidisciplinary rounds. Team work training and open communication to reduce the differences to the point that both sides could work amicably for the benefit of the patients [41]. While lack of communication and collaboration among novice nurses and physician has significantly poor patient outcome, lower perceived ability to meet patients' needs and lower perceived technical quality of care exist in the unit [42].

At El Menshawy hospital the first ranked obstacle was lack of supplies and equipment. This result means that those novice nurses can't make autonomous decisions due to insufficient supplies or equipment needed in the intensive care. Ministry of Health and Population (2012) [43] confirm this finding and reported that most governmental hospitals have poor physical facilities and lack supplies and equipment that affect health care provider's decision making and difficulty in achieving goals and health plan targets. Lack of care facilities caused novice nurses stressed and frustrated because they unable to meet their patient needs, indecisiveness which negatively affect their autonomy in such decisions and giving the feeling of inability to have control over the work [44].

Novice nurses in present study showed that the shortage of staff in ICU ranked high among obstacles for their decision making autonomy. They assumed that the nursing shortage considers from the highest obstacles for the novice nurses' clinical and managerial decision making autonomy. Yet critical care patients were totally dependent on availability of sufficient number of trained novice nurses staff to ensure continuous care and constant bedside attention. Novice nurses play vital role in provision of basic and advanced life support. So there must be at least one trained novice nurse per patient at all times [45].

The fact that for novices, the actual causes for nursing shortage, where the vacancy rate of professional registered nurse in the same time of high patient and work acuity, lack of placement program and support for newly trained nurse. Consequently, their responsibilities increased and experience workload in their

job that affects their clinical and managerial decision making autonomy [46]. Carayon and Gureses (2011) [47] reported that lack of time and heavy workload negatively affected decision making autonomy because novice nurses can't comprehend patient's requirements.

Unclear work responsibility among novice nurses constituted as high rank obstacle for their decision making autonomy in present study. The fact is that the over workload and increasing responsibility in ICU make the novice nurses have limited time to perform tasks that have a direct effect on patient care and limit their autonomy to make independent decisions to perform various procedures. About half of novice nurses implement care without assessment, planning, and evaluation of it . Workload make those nurses have lack of time to gather information about patient's needs and use physical technique as inspection, palpation when making patient assessment. Moreover, less time to analyze patient' assessment data and not to establish priorities for nursing diagnosis and document it. Consequently, they can't make effective care planning.

Present result consistent with the result of Kumari and De (2015) [48] they revealed that (65%) have less time available to deliver care and to interact with their patients and other healthcare professionals to plan and govern the unit, (35%) reported high in nursing errors and expressed both tasks delayed and tasks not completed.

So, it is important for nurse manager to be good observer of the work situations, direct management of the work environment and workstation and make interviews, focus group, and survey of novice nurses to meet the challenges of creating a patient driven healthcare system and decrease their sense of stress caused by workload in their job [49].

Finding of the current study showed correlation between total scores of autonomy in managerial decisions and scores of managerial support obstacles of decision making autonomy. This means that managerial support obstacles limit novice nurses' decision making autonomy in managerial decisions. Actually those novice nurses lack managerial support that ruling over them and lead them reluctant to assume responsibility of independent decision making. They never make managerial decisions because there is no educational program to support their decision making skills and knowledge and nurse manager retain to her self the responsibility of decision making.

Lack of managerial support make the novice nurses ignored about certain issues and decisions that are essential to their

practice because they are separated from making these decisions. They were not involved to set and evaluate standards of nursing practice and ignored to decide when developing nursing staff. Adding that they were overlooked about how to make scheduling, planning and organizing their units.

This result consistent with the result of Eid (2009) [10] who revealed that staff nurses in intensive care units at Tanta university hospitals perceived lack of managerial support and reported absence of educational programs was the highest managerial support barrier for nurses' decisional involvement.

The same result was found by Dorgham and Al Mahmoud (2013) [28] reported low level of decision making autonomy as a result of leadership style and centralized decision making.

Result of present study post program implementation revealed that there was significant improvement in novice nurses' level of knowledge about principles of decision making and autonomy. The fact is that the knowledge and skills level were poor pre program implementation at two hospitals , but it was significantly increased to become at good level post program. This could direct the attention that the implementation of current educational program was succeed as a mean for improving present study novice nurses' knowledge and skills.

Really the present study program maximized the novice nurses' knowledge and skills about autonomous decision making because it was the first educational program about decision making they attend in their employment. The program was planned and implemented according to their pre assessed needs. Furthermore the simplification of educational matter of the autonomous decision making program and the well-presented information by suitable educational aids increase novice nurses' interest and desire to acquire needed principles and knowledge as well as try to apply it.

The result revealed significant improvement of novice nurses' knowledge at Tanta University Hospital than El Menshawy Hospitals . This may be due to that the experienced novice nurses (25%) who had two years of experience or more were working at Tanta university hospitals in which experience in work place increase the ability to integrate knowledge and reaching to the reasoning level . Bakr et al (2013) [50] implies that clinical experience prepares novice nurses to be able of "doing" as well as "knowing" the clinical principles of decision making.

In fact, statistical significant improvement found post program between total levels of

actual managerial decision making autonomy as well as autonomy regarding professional nursing staff development decisions, unit governance and leadership, unit staffing, and organizing the work unit decisions .

About one third of them post program become always monitor of support staff performance against standards, identify nurses' educational needs, recognize appropriate and available services to address patient's health care, and group the activities to be done in the unit. Moreover, more than half always delegate some aspects of work to others and evaluate the effectiveness of the current mode of patient care delivery.

Beside managerial decisions, quarter of novice nurses had moderate level of clinical decision making autonomy compared to none of them had high or moderate level pre program. Statistical significant improvement found between all items of clinical decisions post program. Also about half of novice nurses always make decision making about care implementation and nursing diagnosis compared to low percent pre program. Moreover, considerable percent of them become always make decisions about care planning, patient assessment and outcome identification compared to low percent pre program .

Present study post program result revealed that there was still significant correlation between age & years of experience of novice nurses and their total scores of autonomy in clinical & managerial decisions. This means that practicing decision making is more than the simple application of theoretical knowledge or performing technical skills but it requires integrating knowledge, skills and experience to make a deep understanding of surrounded environment and make effective independent autonomous decisions.

Current study result also showed significant correlation between total scores of clinical decision making autonomy and total score of organizational obstacles to novice nurses' decision making autonomy post program . It means that novice nurses still face general organizational obstacles that limit their decision making autonomy in spite of improving their level of knowledge about principles of decision making and autonomy. Novice nurses as a health care professional provides direct care need to be trusted and valued for creating the context for high level of autonomy and control over nursing practice [(10)]. They have to possess the autonomy and decision making skills needed to provide quality and cost effective care [(18)].

Dorgham and Al Mahmoud (2013) [28] support the finding and reported that despite nurses being equipped with the necessary knowledge and skills to make decisions regarding patient care, they still feel their autonomy in clinical decision making is being constrained as a result of restricted organizational structure and support from physician.

Present study revealed significant correlation between total scores of managerial support obstacles and total scores of managerial decision making autonomy post program . This means that managerial support obstacles still had an effect on novice nurses' managerial decision making autonomy. Actually, post program novice nurses at the two hospitals understudy ranked high organizational obstacles for limiting their decision making autonomy and make high percent of them had low level of decision making autonomy and unable to make the other clinical and managerial decisions.

Novice nurses at Tanta University hospitals post program reported that items of "physician only take decisions", "nurse manager retain the responsibility for decision making", "no support from nurse manager in problems" and "no response from nurse manager to novice nurses problems" are the highest organizational obstacles for their decision making autonomy. At El Menshawy hospitals novice nurses reported that items of "nurse manager retain the responsibility for decision making", "no response from nurse manager to novice nurses problems", "the way of nurse manager in conflict resolution is in equity", and "absence of rules that indicate the freedom in unit decisions" are the highest organizational obstacles for their decision making autonomy. But, "absence of educational program to support decision making skills" become the least obstacles for novice nurses' decision making autonomy at two hospitals because the knowledge level about decision making were improved through the educational program .

Therefore, novice nurses have to be supported and encouraged from both the structure itself by given authority for decision making and their nurse manager in their setting to use relational autonomy to be independent when making decisions. Managerial support to novice nurses through interviewing them to determine their needs and verbalize their problems that are being ignored or frustrated and make recognition [44].

So, novice nurses at Tanta university hospitals and El Menshawy hospitals need to be provided and enforced with periodical autonomous decision making program to assist them to develop their

personal and professional decision making skills, use decision making structures at the workgroup, organizational and professional level of practice, increase their professional profile which facilitate development of new knowledge and skills that needed for making autonomous decisions.

Conclusion

Novice graduate nurses at Tanta University Hospitals and El Menshawy Hospitals had low decision making autonomy for clinical and managerial decisions and they were lacking knowledge about decision making and autonomy principles as well as their ranked high organizational obstacles aggravated to limit their autonomy in clinical and managerial decisions.

Those nurses have great need to attend educational to enforce them to be autonomous decision maker in their professional role.

Recommendation

Based on the finding of the current study the following recommendations are suggested for:

1- Decision making should be facilitated with decentralization of control and non hierarchical structure to support NGNs autonomy in decision making.
2- Prim importance the existence of rules support NGNs autonomy in decision making.
3- Improve team working relationships and collaborate of NGNs and physicians by gently sharing their knowledge, thoughts, abilities and active participation in decision making.
4- Prim importance the availability of sufficient supplies and equipment for carrying out different process to give NGNs the feeling of ability to have control over nursing practice.
5- Prim importance the availability of adequate number of professional registered nurse to decrease NGNs' workload and to have enough time not only for concentration in solving patient's problems but involve with administration to make efficient effective critical decisions.
6- Provide learning environment for novice nurses that support both formal and informal continuing education programs and learning provides for autonomous clinical practice.
7- Orient novice nurses about their job description.

Nurse manager

8-Training activities to nursing supervisors to promote their clinical, decisional, an emotional support to novice graduate nurses

9- Periodic conducting training program and workshop about decision making for novices to support their decision making skills. .

10- Nurse manager have to encourage participate management and shared governance to enhance NGNs' autonomy in decision making.

11- Encourage novice nurses to be actively involved in different types of decisions about quality of professional practice, unit staffing, quality of support staff practice, unit governance and leadership, unit planning, collaboration, staff development and organizing the unit decisions.

At NGNs personal level.

12- Build culture for self-learning and self professional improvement.

Recommendation for further Research

13- Developing program for nurse supervisors for improving their managerial skills and toward novice nurses.

14- Unit based programs for physicians on effective nurse-physician collaboration to improve communication and enhance novice nurses autonomy in decision making.

15-Orientation program for novice nurses on organizational policy, rules and their job description .

References

1- **Hayers C.** Beyond the American dream. Lifelong learning and the search for meaning in a postmodern world. Wasilla. Autodidactic press; 2009.

2-**Cherry B. and Jacobo S.**Contemporary Nursing. 5th ed.U S A. Mosby Co., 2011: 497- 504.

3- **Ebright P., Patterson E. and Chalco B.** Understanding the complexity of registered nurse work in acute care settings Journal of Nursing Administration. 2003;33:630.

4- **Floyd J.P.** How nurse preceptor influence new graduates. Journal of Critical Care Nurse. 2003;3:1- 4.

5- **Gillespie M. and Paterson B.**Helping novice nurses make effective clinical decisions: the suited clinical decision making framework. Nursing Education Perspectives. 2010;30:166-170.

6- **College of Registered Nurse of Nova Scotia,** Position Statement "Orientation of registered nurses to the workplace".2007.Available at:http:// www.crnns.ca/ deocuments/Position StatementOrientationof R.

7- **Queen U.** 5 Competencies needed by new baccalaureate graduates Nursing Education Perspectives, 2004;3:22-5.

8- **Mosa H. H.** Assessing Nurse's Performance at Intensive Care Units. Unpublished Master Thesis Faculty of Nursing. Ain Shams University. 2002:1,10-3.

9- **American Organization of Nurse Executives.** AONE Guiding Principles for the newly licensed nurses' transition into practice. Nurse Leadership. 2010;(2):50-65.

10- **Eid W. M.** Barriers Facing Clinical Nurses Specialist in Decisional Involvement Unpublished Master Thesis. Faculty of Nursing. Tanta University. 2009:7-15.

11- **Abdullah M. T**. A review of the experience of hospital autonomy in Pakistan. The International Journal of Health Planning and Management. 2007;22(1):45.

12- **Mighten A. L.** Shared clinical decision making :a model for enhancing patient safety and quality care. The Kansas Nurse. 2011;82(3)10-1.

13- **Varjus S. L.** Professional autonomy of nurses in hospital setting: a review of the literature. Scandinavian Journal of Caring Sciences .2010;25:201-2.

14- **Wade G.H.** Professional nurse autonomy: concept analysis and application to nursing education. Journal of Advanced Nursing. 1999;30(2):312.

15- **Kramer M. and Schmalenberg C.** Development and evaluation of essentials of magnetism tool.Journal of Nursing Administration. 2004;34(7):356.

16- **Elizabeth D., Papathannassoglou E., and Tseroni M.** Practice and clinical decision making autonomy among critical care nurses. Journal of Nursing Management. 2005;13(2)154.

17- **Kramer M. and Schmalenberg C.** Magnet hospital staff nurses describe clinical autonomy. Nursing Outlook.2003:51 (1):13-5.

18- **kumar M.** Relationships among Professional Nurse Autonomy, Organizational Support and Clinical Nursi Expertise. Published PHD Thesis. University of Lowa. 2009: 32, 44-9.

19- **Smith M.C.** Clinical Decision Making in Acute Care Cardiopulmonary Physiotherapy.

Published PHD Thesis. University of Sydney. 2006:65-9.

20- **American Association of Critical Care Nursing.** Scope and standards for acute and critical care nursing practice. 2008;(101):10-18. Available at www.aacn.org/wd/practice/docs/acnp-scope-and-standards.

21- **Krairiksh M. and Anthony M.** Benefits and outcomes of staff nurses' participation in decision making. Journal of Nursing Administration. 2001;31(1)16-7.

22- **Currey J. and Worral L.** Making Decisions: nursing practice in critical care. Official Journal of the Confederation of Austauralian Critical Care. 2001;14(3):127-31.

23- **Havens D. and Vasey J.** Measuring staff nurse decisional involvement. Journal of Nursing Administration. 2002;33(6):332.

24- **Duchscher J.** A process of becoming: The stages of new nursing graduate professional role transition. Journal of Continuing Education in Nursing. 2008;39(10):441.

25- **Chitty K. and Black B.** Professional Nursing. 5th ed. USA. Saunders Publisher; 2007:179-191.

26- **Messmer P. , Gracia S. and Taylor M.** Enhancing knowledge and self-confidence of nurses: the "shadow -a-nurse" ICU program. Nursing Education Perspectives. 2005;25(3) 131-36.

27- **Institute of Medicine of the National Academies.** Keeping Patients Safe : Transforming the work environment of nurses . Washington, DC: National academies press;2008.

28- **Dorgham S. and Al mahmoud S.** Leadership styles and clinical decision making autonomy among critical care nurses :a comparative study. Journal of Nursing and Health Science. 2013;1 (4):71-2,83.

29- **Thompson C., Dowding D. and Mc Caughan D.** Strategies for avoiding pitfalls in clinical decision making. Nursing Times.2004;100 (20):40-2.

30- **Weston M.** Strategies for enhancing autonomy and control over nursing practice. OJIN: the Online Journal of Issues in Nursing.2010;(15): 1-7.

31- **Facion P. A.** Critical thinking: what it is and why it counts. Available www.insight assessment.com/pdf-fils/what and why 2006. Up dated 2015.

32- **Horsely M. and Thomas D.** Professional regulation & professional autonomy. Change: transformations in education. 2003;6(1):37.

33- **Department for International Development**. Review of the nursing crisis in Bangladesh, India, Nepal, and nPakistan. Retrieved from http://www.unfpa.org /…/R155_OultonHickey_2010_South AsiaReview_Nu.html.

34- **Amini K., Badr F. and Fallah R.** Nurses' autonomy level in teaching hospitals and its relationship with the underlying factors. International Journal of Nursing Practice. 2015;21:52-59

35- **Shamsi A. and Akbari M.** A survey on nursing process barriers from the nurses' view of intensive care units. Iranian Journal of Critical Care Nurs. 2011;4(3):181- 85. ….

36- **American association of colleges of nursing (AACN).** The essentials of baccalaureate education for professional practice. 2010.

37- **Rafi F. and Hazeveh M.** Novice nurses' experience of unpreparing at the beginning of the work. Global journal of Health Science. 2014;6(1):215-220.

38- **Liu Y., Hsu H. and Chen H.** Staff nurse decisional involvement: an internet mixed method study in Taiwan. Journal of Nursing Management. 2015;23:468-78.

39- **Elizabeth D., Maria N. and John W.** Professional autonomy collaboration with physicians, and moral distress amongEuropean intensive care nurses. American Association of Critical Care Nurses.2015;21(2): 41-2.

40- **Der Y.** Multidisciplinary rounds in our ICU: improve collaboration and outcomes. Critical Care Nurs.2011;29(4):84.

41- **Stein J. and Liaschenko J.** Understanding collaboratio between nurses and physician as knowledge at work. Journal of Critical Care. 2007;16:470.

42- **McCaffery R. and Hayes R. A**. Program to improve communication and collaboration between nurses and medical resident. Journal of Continuing Education in Nursing. 2010;41(4):172-178.

43- **Ministry of Health Population.** Human resources for health strategic plan 2011-2015. 2012. Retrieved from http://www.who.int/entity/ Nepal HRH StrategicPlan_finaldraft .pdfNooritager.

44- Hegbaghery **M.** The factors facilitating and inhibiting effective clinical decision making in nursing. Available at: http://wwwBiomed central.com/1472- 6955/3/2. 2004;1,3-9.

45- **Adam S. and Osborne S.** Critical care nursing science and practice. 2nd ed. New York. Oxford inc2005:25-8.

46- **Ibrahim L.K.** Impact of Management Program on Competencies of Baccalaureate Nursing Graduates during Internship Year. Unpublished PHD Thesis. Faculty of Nursing. Tanta University. 2009: 2, 9, 20-1.

47-**CarayonP.andGuresesA** Nursing workload and patient safety in intensive care units: a human factors engineering evaluation of the literature. Intensive Critical Care Nursing. 2011;21:284.

48-**Kumari S. and De A.** The Nursing Shortage Impact on Job Outcome (The Case in Sri Lanka). Journal of Competitiveness. 2015;7 (3), 75- 94 available at : http://doi.org/ 10.7441/joc.2015.03.06.

49- **Ferguson P. and Bandurchin A.** The Ontario nursing workload demonstration project: rethinking how we measure cost and plan the work of nurses. Nursing Leadership. 2010;23:20-32.

50- **Bakr M., Sherif N. , Eid N. M. and Elshal S.** Factors influencing decision making and its effect on interns student clinical performance. World Applied Programming Journal. 2013;3(2):75-7.

Effects of Psycho – Educational Program About Spirituality on The Quality of Life Among Hospitalized Psychiatric Patients

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Abstract

Spirituality affects mental health in a positive way and creates an environment conducive for personal well being. Spirituality is being referred to one of the forgotten dimensions of personal well being and mental health care. It is often described as a mental platform, where one can meet their true self. It is considered a sacred realm of human and self experience**. Aim of the Study** : to determine the impact of psycho-educational program about spirituality on the quality of life among hospitalized psychiatric patients. **Study design** : A quasi experimental design was utilized for this study. **Setting** : The study was conducted at Tanta mental health hospital . **Subject**s : The subjects of this study consisted of 50 hospitalized psychiatric inpatients , they were fulfilling the following inclusion criteria ; adult aged from 18 to 63 years , psychotic patient not having mystical experiences , able to communicate relevantly and willing to participate in the study. **Tools**: Three tools were used to collect data **A structured Interview Schedule** to collect data regarding socio demographic and clinical characteristics of the studied patients , **Daily Spiritual Experience Scale** and **WHO Quality of life instrument. Results :** showed that there were significant statistically positive correlation between the total score of quality of life and total score of spirituality among the studied patients pre , immediately , one month and three months post application of the program. **The study concluded** : The use of spiritual program have a positive effects on quality of life of hospitalized psychotic patients . **Recommendations** : Awareness and training programs about importance of spirituality for mentally ill patients should be develop and conducted for all psychiatric nurses to participate in the provision of spiritual care .

Key wards : Spirituality , Quality of Life , Psychiatric Patient , Mental Illness

Introduction:

Spirituality is a core element of our inner world that has no boundaries and certain rules, but built on individual choice. It is the way of validation of the unknown through various religious circles. Spirituality gives people a sense of freedom, the power to live and be spiritually strong person . Moreover, it helps to find a deeper meaning of life, realize obvious things and break the walls of inner conflicts [4].

Spirituality has been defined as the beliefs and practices that develop based on personal values and ideology of the meaning and purpose of life . It refers to the belief that there is a power or powers outside one's own that transcend understanding [5]. It has been stated that there are three dimensions of spirituality . These are : making personal meaning out of situations ,coming to an understanding of self and appreciating the importance of connections with others [6].

Spirituality is a client's belief about life , health , illness , death and one's relationship to the universe . It differs from religion , which is an organized systems of beliefs about one or more knowing forces that govern the universe and offer guidelines for living in harmony with universe and others. Spirituality is not an individual creation , it is shaped by larger social circumstances and by the beliefs and values of the wider culture [7].

Recent years have seen an increase in scientific interest in the relationship between religion and spirituality and mental health. This interest has demonstrated beneficial effects in the lives of the religious people . Better mental health, greater well being, higher quality of life, and lower rates of depression, anxiety, and suicide have all been reported among more religious individuals [1,2] . However , there is a growing body of research demonstrating that there is also a negative side to religion, and that religiously based struggles can be a source of distress for many patients . This dual nature of religion and spirituality in the lives of psychiatric patients demands increased awareness of the religious aspects of patients' lives, as well as resources available to assist those who are struggling [3].

Currently , nurses are not well prepared to deal with psychiatric clients' spiritual concerns . Psychiatric nursing curricula and texts devote little content to spirituality . Andrews and Boyle (2003) , discuss several reasons why nurses fail to provide spiritual care to culturally diverse clients . They state the nurse may view religious and spiritual needs as a private matter between the client and his or her creator , deny the existence of spiritual needs or feel uncomfortable about one's own religious beliefs , lack of knowledge about the religious beliefs or spirituality of others , mistake spiritual needs for psychological needs , and believe that the spiritual needs of clients are the responsibility of a family or leader , yet clients clearly want this aspect of their lives to be considered in their care [8].

Koening (2007) , reminds nurses that they should do five things regarding spiritual care ; take a spiritual history , support and show respect for the patient's beliefs ; pray with the patient if the nurse is comfortable doing so and if the patient wants and requests it ; provide spiritual care by being kinds , gentle , sensitive and compassionate , and refer to religious man [9] .

Quality of life (QOL) has become an increasingly important concept in assessing clinical change in persons with severe and persistent mental illness . The concept of QOL has progressively shifted from a strictly sociological and objective prospective to a psychosocial prospective in which the individual's sense of well-being becomes a primary dimension of QOL. The emphasis of the current approach on subjectivity about satisfaction with life as well as on the individual's perception of his / her daily functioning − is more related to the happiness and psychological well-being than to the social indicators of traditional research . QOL has subjective and objective components. The subjective component refers to "well-being ," "happiness" or "life satisfaction," whereas the objective component refers to aspects of environment and social functioning [10].

Recently , various bio- psycho- social factors have been identified in relation to quality of life for people with mental illness , but the role of spiritual factor on it has been relatively neglected . Little research has been done on the effects of spirituality on quality of life for people with severe mental illness [5]. Research findings also have been shown that

spirituality and religion can enhance individuals' quality of life by positively contributing to greater life satisfaction , happiness , positive affect , morale and hope [11] .

Some people express spirituality by participating in an organized religious community and by adhering to a set of rules of behavior for example , the person renews spirituality through experiencing the beauty of nature , the use of prayer , meditation , fasting , belonging to religious literature , and listening to inspiring music Others express spirituality through. forgiveness , worship and rituals , fellowship and altruistic service , and journal writing [12] . people suffering from various mental health problems such as depression , anxiety , stress benefits from spirituality [13] .

Therefore , this study aims to determine the impact of implementation of psycho - educational program about spirituality on quality of life among hospitalized psychiatric patients .

Aim of the study II

The aim of this study was to :

Determine the impact of psycho-educational program about spirituality on the quality of life among hospitalized psychiatric patients.

Research Hypothesis:

Psychiatric patients may improve their perception about their quality of life. This can be achieved through implementation of psycho-educational program about spirituality.

III Materials and Method

Research design

A quasi – experimental design was utilized for this study

Setting:

The study was conducted at Tanta Mental Health Hospital affiliated to the Ministry of Health and population mental health care services to Gharbya , Menofia and Kafr El Sheikh governorates .

Subjects:

The subjects of this study consisted of 50 hospitalized psychiatric inpatients .They were selected according to the following criteria : Adult aged from 18 to 63 years , both sexes psychotic patient not having mystical experiences , able to communicate relevantly and willing and agree to participate in the study .

Tools of data collection:

The data of this study was collected by using three tools :

Tool I : A structured Interview Schedule

It was developed by the researcher , it comprise of two parts : -

part (1) : Bio- Socio Demographic Characteristics Data of the studied patients It include ; age , sex , marital status , residence , living accommodation educational level , occupation and income

part (2) : Clinical Characteristics Data of the Studied Patients It include ; diagnosis , the duration of illness , number of previous hospitalization and date of admission .

Tool II : Daily Spiritual Experience Scale (DSES)

The scale was developed by Underwood (2002) [14] , to assess the spirituality experience of participants . It consisted of 16 items , self – report measure of spiritual experience . The implemented toll consisted of 15 statements . The researcher deleted item 12 (I feel thankful for my blessings) , as it was difficult for the patient to understand and respond , for the first 14 items of the scale , each item measured on a 3 point Likert – type scale ranging from (1= Every day , 2= some days , 3= Once in a while or Never) . Item 15 was measured on a 4 – point scale ranging from (1= Not close at all , 2= Some what close , 3= Very close , 4= As close as possible). The total score was 46 points which result from multiplying total number of questions , and then the result was divided by 100 to be converted into percentage . The total score of patients' spirituality was calculated and classified as follows : Less than 50 % had low spirituality experience , 50 % - 70 % had moderate spirituality experience and more than 70 % had high spirituality experience

Tool III : WHO Quality of life instrument (WHO QOL- BREF)

This tool was developed by the WHO QOL Group (2004) [15]. The WHO QOL – Bref is a Interview report consists of 26 items that measure overall quality of life as well as four specific quality of life domains ; **Physical health domains** includes ; 7 items , **Psychological domains** includes ; 6 items , **Social relationships domains** and **Environmental domains** includes ; 8 items . **Two other items** measure overall QOL and general health .The patients were asked to respond to these questions with only one correct response for each

question . Responses were rated originally on 5 point liker scale . For the purpose of this study , responses to become more easy for the patients to understand items were rated on a 3 - point likert scale ; ranging from (1= very Poor , 2= Neither poor nor good , 3= Very good) , 3 indicates high score and 1 indicates low score . The total score was 78 which result from multiplying total number of questions , and then the result is divide by 100 to be converted into percentage . The total score of patients' quality of life was calculated and classified as follows : - Less than 50 % had low quality of life , 50 % - 70 % had moderate quality of life and more than 70 % had high quality of life .

Method

- An Official permission to conduct the study was obtained from the Faculty of Nursing to the responsible authorities (The Head of Tanta Mental Health Hospital) . ethical considerations were protected as a written Consent was obtained and patient's privacy and data confidentiality was assured . Tool I (socio-demographic and clinical data sheet) was developed by the researcher, after a thorough review of related literature . Tool II and Tool III were translated into Arabic language by the researcher . Tool II and III were tested for face and content validity by a jury composed of a group of five experts in the psychiatric field to examine validity of the study tools . The pilot study was conducted on 10 patients out of the proposed sample after taking their approval to test the applicability and feasibility of the study tools before embarking in the field of work , after its implementation and according to its result , the necessary modifications were done . Tool II and tool III were tested for reliability by administering it to 10 patients using Cronbach's alpha (a) . The reliability of tool II is also found to be high , and the Cronbach's alpha (a) of the DSES is 0.93 . Reliability estimates based on Cronbach's alpha is high for the total WHOQOL- BREF scale (α =.93) . Also , reliability estimates for physical health domain subscale (α = .74) ; psychological domain subscale (α = .87) ; social domain subscale (α= .70) , and environmental domain subscale (α = .80) are all satisfactory .

Actual study was divided into four phases:

Assessment phase ; the researcher reviewed all psychiatric in patients'

records in order to select those who meet inclusion criteria , the selected patients were interviewed for a pre-test using socio- demographic clinical data sheet , Daily Spiritual Experience Scale (DSES) , and WHO Quality of life instrument (WHO QOL- BREF) . Each interview lasted for 30 -45 minutes , assessment phase took 4 weeks (3days / week)

Program development phase ; the researcher designed a spiritual psycho – educational program based on data obtained from the patients in the assessment phase and literature review [15-20] . The researcher prepared essential materials for conducting the program such as drawing papers , different size of papers for drawing and painting , water colors, pens , pencils , brushes , books as religious books and holly Quran , colorful magazines and laptops . The study subjects were divided into 10 groups, each group attended a total of 9 sessions, and each group involved 5 patient. Time of each session ranged from 1-2 hours according to the session activities. Sessions were scheduled as 3 session per week. The duration of program implementation for each group was 3 weeks. Place for application of the session : Activity hall in second floor at Tanta Mental Health Hospital .

Implementation Phase ; The intervention was carried out for patient in group discussion according to the session , different methods of teaching were used including : Group discussions , interactive lectures , demonstration and re – demonstration .Visual , audio and audio visual material were used as teaching aids

Teaching sessions were as follows**:**

1- The First Session (Introductory Session) The researcher introduced herself for the patients , introduce patients to each other and give each patient the opportunity to talk about himself after explanation of the aim of the study and notifying them about the schedule of the program .

2- The Second Session

The researcher interviewed the patients and give him an opportunity to identify the meaning of spirituality, benefits of spirituality and examples about spiritual practices.

3- The Third Session

This session focused on providing the patients with an opportunity to explore religious and spiritual issues by asking each patient some questions in relation to

their religious and spiritual issues in the past , present and future life .

4- The Fourth Session

This session focused on helping the patient to participate in spiritual practices as spend time in meditation. The researcher inform the patient about the meaning of meditation , characteristics of meditation , steps of implementing meditation , and what must be avoided when implementing meditation .

5- The Fifth Session

This session focused on educating the patient about forgiveness, inform each patient about the meaning of forgiveness, its importance, the role of forgiveness in Islamic religion(all study group Muslim) , and the 12 steps of forgiveness .

6- The Sixth Session

firstly this session focused on the praying , Secondary this session focused on helping the patient to know about scripture neither reading the holly Quran nor listening to another patient when reading holly Quran or listening to registered Quran . Thirdly this session focused on introducing audio visual material as videos about religious topics .

7- The Seventh Session

This session focused on helping the patient to participate in drawing, and to practice listening to soft music.

8- The Eighth Session

This session focused on helping the patients to perform exercises such as deep breathing exercise and muscle relaxation technique.

9- The Ninth Session

The researcher review the topics covered by the group and solicit feedback from the group members about the program.

Evaluation Phase The evaluation of the implemented program was done by: - reapplying of tool II (DSES) and tool III (WHO QOL scale) as follows: - Immediately after the implementation of the program , one months later after the program implementation , three months after the implementation of the .

Statistical Analysis

Data analysis:

Data were collected over a period of 8 months starting from January 2015 to August 2015 . Data were then categorized and coded . Statistical presentation and analysis of the study was conducted , using the analysis of variance [ANOVA] , Chi-square and t tests by SPSS v20.

IV Results

As regard the socio-demographic characteristics of the studied patients , the study shows that most of the patients were male (74 %), their mean age was 42.6 ± 12.7 years , 48 % of them were single and 32% were married . In relation to the residence of the studied patients, it shows that 60% of the patients were living in rural areas and 54% of them live with their families . Concerning the patients' income , 56% of the studied patients reported that it was not enough .

Concerning the patients' level of education , 28% of the studied patients were either illiterates or read and write , and 26% had secondary education and the same percentage also reported having university education . Regarding to the occupation of the studied patients , 32% of them were manual workers , 28% were unemployed , 26 % were employees and only 14 % of

them were retired .

Table (1) shows the percentage distribution of the studied patients according to their clinical data. It shows that 54% of the studied patients had schizophrenia and 30% had depression. Regarding the duration of the illness , 38 % of the studied patients had the disease from 10 to 25 years , and 26 % of them had the disease from one to less than 5 years with a mean of 11.7 ± 6.5 years . Regarding the number of previous hospitalization of the studied patients 44 % were admitted three times and more , while 24 % of the studied patients were not previously admitted to the hospital .

Table (2) Represent percentage distribution of the studied patients according to their total score of the spirituality through the study phases . It is observed that only 8 % of the studied patients gained high spirituality score pre the program application . This percentage improved immediately post the program application to reach 62% of the studied patients and 70 % of them at one month post the program application , then decreased to 44% three months post the program application.

There is statistically significant differences between the preprogram application phase and other phases of the program (immediately, one month and three months post the program application (x2 = 34.813, , 42.200 and 21.991 respectively) and p value <0.001*.

Table (3) Represent percentage distribution of the studied patients

according to their total score of the quality of life through the study phases . The table illustrate that the total score of quality of life for 68 % of the studied patients was low at preprogram application , while immediately post the program application the total score of quality of life improved as more than one third of them (38%) had high quality of life score . This percentage increased to 62% of them one month post program , then decreased to 54% of them three months post program application. There were statistically significant difference between the preprogram application phase and other phases of the program (immediately , one month and three months post the program application) as x2 = (32.534, 37.985, and 35.291 respectively) and p value <0.001*.

Table (4) shows that there is significant statistically positive correlation between the total score of QOL and total score of spirituality among the studied patients pre , immediately , one month and three months post application of the program , as r = (0.537 , 0.661 , 0.982 and 0.830 respectively) and p – value = (0.047 , 0.034 , < 0.001 and 0.005 respectively) .

Table (5) Represent the relationship between socio demographic characteristics of the studied patients and their total score of quality of life through the study phases . The table shows that there is statistically significant relationship between quality of life and age of the studied patients as of those who gained high score immediately post program application were from the age group 30 to less than 40 years. (x^2 = 18.530 and p value = 0.005) .

The table reflect that there is a statistically significant relationship between the total score of quality of life and sex of the studied patients , as it was observed that the majority of the studied patients 94.7% who had high quality of life immediately post the program application were males (x^2 = 12.132 and p- value = 0.002) , and 80.6% of the studied patients who had high quality of life one month post program application were males (x^2 = 9.778 and p- value = 0.008)

This table also demonstrate that there is a statistically significant relationship between the quality of life of the studied patients and their marital status as it was observed that (60 %) of the studied patients who had high quality of life immediately post program application were married (x^2 =18.787and p- value = 0.016) and 50 % of them who had high quality of life three month post program

application were married (x^2 =17.034 and p- value = 0.030)

This table illustrate that there is a statistically significant relationship between the quality of life of the studied patients and their income at one month post program application as it was observed that 64.5% of the studied patients who had high quality of life had enough income (x^2 =17.705 and p- value = 0.002) .

Table (6) Represent the relationship between diagnosis of the studied patients and their total score of quality of life through the study phases , it was observed that there was no statistical significant relationship between diagnosis of the studied patients and their score of quality of life except immediately post program application where 52.6% of the studied patients who had significantly high scores of quality of life had diagnosis of depression (x^2 =15.222 and p- value = 0.019) .

Table (7) Illustrate that there is statistically significant relationship between duration of the illness of the studied patients and their total score of spirituality as immediately post program application more than one third of the studied patients (38.7%) of those who had high spirituality score had the disease from 1to less than 6 years (x^2 =13.040 and p- value = 0.042) , and more than half of the studied patients 54.6 % of those who had high quality of life score at the three months post the program application had the disease more than 10 years (x^2 =16.679 and p- value = 0.011).

Table (1): Percentage distribution of the studied patients according to their clinical data .

Clinical characteristics	**The studied patients** (n=50)

	N	%
Diagnosis:		
Schizophrenia	27	54.0
Depression	15	30.0
Bipolar disorder	6	12.0
Addiction	2	4.0
Duration of the disease :		
<1 year	8	16.0
1 -	13	26.0
5 -	10	20.0
10 – 25	19	38.0
Range	**8 month – 25 years**	
Mean ± SD	**11.7 ± 6.5**	
Number of hospital admissions:		
No previous hospitalization	12	24.0
One time	8	16.0
Two times	8	16.0
Three times and more	22	44.0

Table (2) Percentage distribution of the studied patients according to their total score of the spirituality through the study phases (n=50):

Total score of the spirituality	**The program phases**							
	Pre the program		Immediately post program		one month post program		3 months post program	
	N0	**%**	**N0**	**%**	**N0**	**%**	**N0**	**%**
Low	26	52.0	6	12.0	5	10.0	8	16.0
Moderate	20	40.0	13	26.0	10	20.0	20	40.0
High	4	8.0	31	62.0	35	70.0	22	44.0
Pre the program & immediately post program application	$x^2 = 34.813$ P = <0.001*							
Pre the program & one month post program application	$x^2 = 42.200$ P = <0.001*							
Pre the program & three month post program application	x^2 21.991 p= <0.001*							

Table (3) Percentage distribution of the studied patients according to their total score of the quality of life through the study phases (n=50):

Total score of the quality of life	The program phases							
	Pre the program		Immediately post program application		one month post program application		3 months post program application	
	N0	%	N0	%	N0	%	N0	%
Low	34	68.0	5	10.0	9	18.0	7	14.0
Moderate	13	26.0	26	52.0	10	20.0	16	32.0
High	3	6.0	19	38.0	31	62.0	27	54.0
Pre the program & immediately post program application	x^2 = 32.534 p = < 0.001*							
Pre the program & one month post program application	x^2 = 37.985 p = < 0.001*							
Pre the program & three month post program application	x^2 = 35.291 p = < 0.001*							

Table (4) Correlation between total score of spirituality and quality of life among the studied patients through the study phases (n=50):

Total score of the quality of life	Total score of the spirituality	
	r	P- value
Pre the program	0.537	0.047*
Immediately post program	0.661	0.034*
One month post program	0.982	< 0.001*
Three months post the program	0.830	0.005 *

Significant at p < 0.0

Table (5) Relationship between socio demographic characteristics of the studied patients and their total score of quality of life through the study phases (n=50) :

Total score of quality of life	Pre the program application			Immediately post program application			one month post program application			Three months post program application		
	Low	Mode rate	High	Low	Modera te	High	Low	Mode rate	High	Low	Modera te	High
	N0 % n= 34	N0 % n= 13	N0 % n= 3	N0 % n= 5	N0 % n= 26	N0 % n=19	N0% n=9	N0 % n=10	N0 % n= 31	N % n=7	N % n=16	N % n=27
Age in years												
20 -	11 32.3	5 38.4	1 33.3	2 40.0	9 34.6	6 31.6	3 33.3	4 40.0	10 32.2	0 0.0	6 37.5	11 40.8
30 -	6 17.6	3 23.0	0 0.0	0 0.0	1 3.9	8 42.1	2 22.2	1 10.0	6 19.4	2 28.6	3 18.8	4 14.8
40 -	13 38.2	3 23.0	2 66.7	1 20.0	14 53.9	3 15.8	3 33.3	2 20.0	13 41.9	4 57.1	6 37.5	8 29.6
50 – 65	4 11.8	2 15.4	0 0.0	2 40.0	2 7.6	2 10.5	1 11.1	3 30.0	2 6.5	1 14.3	1 6.2	4 14.8
X^2- p	3.361 (0.910)			18.530 (0.005*)			5.913 (0.657)			7.437 (0.490)		
Sex												
Male	25 73.5	10 76.9	2 66.7	1 20.0	18 69.2	18 94.7	3 33.3	9 90.0	25 80.6	7 100.0	11 68.7	19 70.4
Female	9 26.5	3 23.1	1 33.3	4 80.0	8 30.8	1 5.3	6 66.7	1 10.0	6 19.4	0 0.0	5 31.3	8 29.6

Significant at p < 0.05

Continue table (5)

X^2 - p	**0.145 (0.930)**			**12.132 (0.002*)**			**9.778 (0.008*)**			**2.874 (0.238)**		
Marital status												
Single	**17 51.5**	**7 53.9**	**0 0.0**	**3 60.0**	**14 56.0**	**7 35.0**	**4 50.0**	**7 63.6**	**13 41.9**	**5 71.4**	**8 53.3**	**11 39.3**
Married	**9 27.3**	**4 30.7**	**3 75.0**	**0 0.0**	**4 16.0**	**12 60.0**	**2 25.0**	**1 9.1**	**13 41.9**	**1 14.3**	**1 6.7**	**14 50.0**
Divorced	**6 18.2**	**1 7.7**	**0 0.0**	**2 40.0**	**5 20.0**	**0 0.0**	**2 25.0**	**2 18.2**	**3 9.7**	**1 14.3**	**4 26.7**	**2 7.1**
Widow	**1 3.0**	**1 7.7**	**1 25.0**	**0 0.0**	**2 8.0**	**1 5.0**	**0 0.0**	**1 9.1**	**2 5.5**	**0 0.0**	**2 13.3**	**1 3.6**
X^2 - p	**8.468 (0.389)**			**18.787 (0.016*)**			**10.894 (0.208)**			**17.034 (0.030*)**		
Income												
Not enough	**19 55.9**	**8 61.5**	**1 33.3**	**2 40.0**	**15 57.7**	**11 57.9**	**9 100.0**	**8 80.0**	**11 35.5**	**3 42.9**	**9 56.2**	**16 59.2**
Enough	**15 44.1**	**5 38.5**	**2 66.7**	**3 60.0**	**11 42.3**	**8 42.1**	**0 0.0**	**2 20.0**	**20 64.5**	**4 57.1**	**7 43.8**	**11 40.8**
X^2- p	**0.788 (0.674)**			**0.577 (0.749)**			**17.705 (0.002*)**			**0.608 (0.738)**		

Significant at p < 0.05

Table (6) Relationship between diagnosis of the studied patients and their total score of quality of life through the study phases (n=50) :

Total quality of life	Pre the program application			Immediately post program application			one month post program application			Three months post program application		
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	N % n= 34	N % n=13	N % n= 3	N % n=5	N % n= 26	N % n= 19	N % n=9	N % n=10	N % n=31	N % n=7	N % n=16	N % n=27
Diagnosis												
Schizophrenia	18 52.9	8 61.5	1 33.3	5 100.0	18 69.3	4 21.1	4 44.4	7 70.0	16 51.6	5 71.4	7 43.7	15 55.6
Depression	11 32.4	3 23.1	1 33.3	0 0.0	5 19.2	10 52.6	2 22.2	2 20.0	11 35.5	1 14.3	7 43.7	7 25.9
Bipolar disorder	3 8.8	2 15.4	1 33.3	0 0.0	2 7.7	4 21.1	2 22.2	1 10.0	3 9.7	0 0.0	2 12.6	4 14.9
Addiction	2 5.9	0 0.0	0 0.0	0 0.0	1 3.8	1 5.2	1 11.2	0 0.0	1 3.2	1 14.3	0 0.0	1 3.7
X^2 – p	3.152 (0.790)			15.222 (0.019*)			4.025 (0.673)			5.970 (0.427)		

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Table (7) Relationship between duration of illness of the studied patients and their total score of spirituality through the study phases (n=50) :

Total score of spirituality	Pre the program application			Immediately post the program application			one month post the program application			Three months post the program application		
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	N % n= 24	N % n=20	N % n=4	N % n=6	N % n=13	N % n=31	N % n=5	N % n=10	N % n=30	N % n=8	N % n=20	N % n=22
Duration of the illness (years):												
Less than 1 year	4 15.4	4 20.0	1 0.0	0 0.0	4 30.8	4 12.9	1 20.0	2 20.0	5 14.3	4 50.0	2 10.0	2 9.1
1-	8 30.8	5 25.0	0 0.0	0 0.0	1 7.7	12 38.7	1 20.0	4 40.0	8 22.9	4 50.0	6 30.0	3 13.6
6-	6 23.0	3 15.0	1 25.0	1 16.7	2 15.4	7 22.6	2 40.0	1 10.0	7 20.0	0 0.0	5 25.0	5 22.7
More than 10 years	8 30.8	8 40.0	3 75.0	5 83.3	6 46.1	8 25.8	1 20.0	3 30.0	15 42.8	0 0.0	7 35.0	12 54.6
X^2 - P	4.364 (0.628)			13.040 (0.042 *)			3.482 (0.746)			16.679 (0.011*)		

Significant at p < 0.05

V Discussion

Spirituality can play an important role in helping people live with or recover from mental health problems. Spirituality is not tied to any particular religious belief or tradition. It can also help people to deal with mental distress or mental illness , and bring a feeling of being connected to something bigger than self and it can help people make sense of what they are experiencing [21] .

The present study revealed that most of the patients were males **,** this may be due to the nature of availability of male patients during data collection phase as the number of hospitalized male patients were more than the female patients during this period . This may be due to the culture of rural people at Tanta city who do not prefer to hospitalize females in a psychiatric hospital unless it is extremely necessary .They usually prefer outpatient treatment and home care . These results were similar to those of the study done by **Shalaby (2013)** who found that 70% of patients were males [22] . This is in contrast with the study by **Young K . (2012)** , about factors predicting overall life satisfaction for people with long-term mental illness who found that 62.2 % of the patients were females [23].

The present study revealed that more than half of the studied patients had schizophrenia **(Table 1)** .This may be attributed to that schizophrenia is more common in psychiatric hospital as a major psychiatric illness that needs hospitalization . In a study by **Sharir D**. **et al , (2007)** about social support and quality of life among psychiatric patients in residential homes , found that 38% of patients had schizophrenia [24].

Regarding the total score of spirituality of the studied patients , the results of the present study showed that more than half of the studied patients had low total spirituality score pre the program application **(Table 2)** . This may be due to unawareness of the spiritual dimension in the hospital and not including spiritual assessment and intervention in the patient care plan .It was noticed that immediately and after one month application of the program , about two thirds of the patients gained high spiritual score . This indicates that the educational program had noticeable effect on the spirituality score of the studied patients e.g., help the patients to participate in spiritual practice as spend time in meditation , participate in reading and listening about scripture , perform praying according to patient's like either

solitary or with a group , identify the meaning of some religious topics through watching religious video as there was no opportunity for attendance of religious leader to the hospital because the hospital policy not allow for that . It was observed that the score decreased after three months of the program application as less than half of patients had high spiritual score . This may be as the result of stoppage of the program and the hospital policy focused mainly on medical care not on the spiritual care . Furthermore , the numbers of social workers was not sufficient to provide spiritual care for each patient and they were not fully interested with spiritual considerations , but their emphasis was on provision of recreational therapy .

This result is supported by a study done by **Hefti R .(2011)** , who applied program about integrating religion and spirituality into a mental health care setting , and found that more than 80 % of the participants used religious beliefs or activities to cope with daily difficulties and religious or spiritual coping was an essential part of their coping behavior as religion provides patients with a framework to cope with disease – relate struggles and instilled hope , purpose , and meaning in their lives [25] .

Initially, within the field of psychiatric research , the principal focus of QOL assessment has been on the symptoms, impairments, and disabilities of severely mentally ill persons suffering from long term and disabling illnesses such as schizophrenia , chronic depression, manic-depressive illness, and severe personality disorders. The reason for this focus lied in considering general population measures of QOL insensitive to the issues faced by this disabled population [26] .

Recently, researchers have tried to identify those factors leading to better quality of life for people with severe mental illness. However, many research studies have focused on the negative impact of psychiatric symptoms on individual's quality of life. These research studies consistently report that quality of life are negatively affected by current psychiatric symptoms, especially symptoms of depression and anxiety, experienced by people with severe mental illness [27-30]

The results of the present study showed that the total score of quality of life for more than half of the studied patients were low at the pre program application **(Table 3)** . This may be due to the nature of their psychiatric illness and some socio – demographic characteristics , as more than

half of the studied patients were from rural area in which most people there were not be concerned about their mental health and wellness and lack the awareness about psychiatric diseases . Furthermore , about half of the studied patients reported that they did not have enough income , were singles , even their mean age was 42.6 years , hospitalized 3time and more . All these factors may be attributed to low quality of life for the studied patients . Immediately post program application the total score of quality of life improved as more than one third of them had high quality of life score . This percentage increased one month post the program as more than half of patients had high total score of QOL . This may be due to the effect of program which included educational sessions about spirituality , forgiveness and training sessions that focus on stress reduction techniques as meditation and training exercise as deep breathing exercises , yoga , muscle relaxation techniques . Then the percentage decreased three month post the program application . This highlights the need of the nursing and medical staff at the hospital to be more engaged in providing more time and effort with these patients to help them to express their feelings and concerns and to train them to practice some techniques for stress reduction . This is supported by a study done by **Evans S . (2007)** , about quality of life impairment in schizophrenia, mood and anxiety disorder , found that people with severe mental illness are consistently found to have a lower quality of life than the general population without mental illness [(31)] . Furthermore , the quality of life of people with severe mental illness is found to be lower than people with common mental disorders [(32)] . Moreover, their lower level of quality of life is found to remain relatively stable throughout the course of mental illness [(24)] .

The present study showed that there were a significant statistically positive correlation between the total score of QOL and total score of spirituality among the studied patients pre , immediately , one month and three months post the application of the program **(Table 4)**. . This result is consistent with the study by **Babaie E and Razeghi N . (2013),** about comparing the effects of methadone maintenance treatment, therapeutic community, and residential rehabilitation on quality of life and mental health of drug addicts .The study found that engaging in religious activities and participating in religious ceremonies affects people's relationships with others, and can affect people's

physical health and mental wellbeing. From these results , they recommended that religious and spiritual beliefs and practices can be assumed as supporting actors that bring hope and strength and give meaning to life. This, in turn , leads to a reduction in stress levels and improvements in people's quality of life [33].

A study done by **Abdullah C. (2012)** , about generalized anxiety disorder (GAD) from Islamic and western perspectives , found that full trust and complete reliance on God empowers a person to get relief from anxieties and fears in life [34] . **Koenig et.al., (2001)** , who analyzed the relationship of religion and health , found that if individuals have a meaningful life , they would be less vulnerable to develop anxieties and other psychopathologies . Moreover , a number of religious and spiritual activities are thought to encourage more frequent daily spiritual experience and these activities can then promote individual's quality of life [35].

Concerning relationship between patient's age and total score of quality of life .The present study showed that there was statistically significant relationship between quality of life and age of the studied patients immediately post program application as about half of those who were from the age group 30 to less than 40 years had high quality of life **(Table 5)**. This may be attributed that patients in the young age have the energy and possess the ability to learn new things and respond quickly to stimulation and psychological counseling and that the illness did not become chronic , as it is easy to change certain patient's negative behavior . This is similar to a study done by **Mohamed S . (2010)** , found that younger patients were responding better and have high response to health wellness quality of life (HWQOL) immediately post program intervention [36]. In contrast , a study done by **Ahmed F. et al , (2004**), about clinical characteristics and quality of life of schizophrenic patients at Alexandria , and studied the effects of age on the subjective QOL of people with severe and persistent mental illness . Findings demonstrated that age was systematically related to the degree of satisfaction as older participants were more satisfied than younger ones [37].

Concerning relationship between patient's sex and total score of quality of life it was observed that the majority of the studied patients who had high quality of life immediately post the program application were males , and this was also true one month post program application . This may be due to that male patients constituted nearly three quarters of the

study sample and male patients generally have better social functioning , and more employment . In this respect a study done by **Adep S. (2007)**, about the relation between quality of life and locus of control among schizophrenic out patients at Alexandria , found that QOL was consistently worse for women [38] .This come in contrast with **Harfush S . (2014)** , who found that females had better QOL than male [39] .

The present study represented that there was a statistically significant relationship between the quality of life of the studied patients and their marital status as it was observed that more than half of the studied patients who had high quality of life immediately post program application were married and half of those who had high quality of life three month post program application were also married **(Table 5)** . This may be due to marriage help those people to have more social activities and support from their spouses and children while singles and divorced may suffer from loneliness which is associated with psychological problems .

These findings were similar to those of the study done by **Akbiyik D et al. (2008)** , about quality of life of Turkish patients with depression in Ankara and in Berlin . The study found that recurrent depressive disorders (RDDs) have been observed to have significant marital maladjustment [40]. This is in contrast with the study of **Subodh B. et al. , (2008**) , about psychosocial impact of dysthymia : a study among married patients., observed poor marital adjustment in depressive disorders but found no evidence of its link to psychosocial functioning or QOL[41]

Regarding the relationship between diagnosis of the studied patients and their total score of quality of life through the study phases , the present study showed that there was no statistical significant relationship between diagnosis of the studied patients and their score of quality of life except immediately post program application where more than half of the studied patients who had significantly high scores of quality of life had diagnosis of depression and schizophrenic patients had low scores of quality of life **(Table 6)** . This may be due to the nature of schizophrenic disorders that have great disturbance of thought function and disharmony between patient's affect , thought and behaviors and it is difficult to enhance patient's response in this period . This is supported by a study of **Mohamed S**. (**2011**), reported that depressive and bipolar patients had better response to health wellness QOL (HWQOL) while

schizophrenic patients had lower responses [36].

The present study showed that there was a statistically significant relationship between duration of the illness of the studied patients and their total score of spirituality as more than one third of the studied patients who had high spirituality score immediately after the program application had the disease from 1to less than 6 years, and more than half of the studied patients of those who had high quality of life score three months post the program application had the disease more than 10 years **(Table 7)**. This may be due to when the length of period of disease increase, the patient become more close to Allah , coping positively with his disease and have greater well being . This result was supported by **Shalaby (2013)** , who found that there was a positive significant statistical correlation between duration of mental illness and high score of spirituality [22] . In contrast **Harfush S . (2014)** , reported that those who had a duration of illness less than 5 years had a better QOL than those whose duration of illness was more than 15 years [39].

VI Conclusion and Recommendations

Based on the results of the present study, it can be conducted that there was marked improvement in the total score of patients as regard spirituality and QOL after application of psycho education program . Young aged, married males gained significantly higher scores of QOL and spirituality than others after implementation of the program. Furthermore, the QOL of the patients significantly correlated with their spirituality.

The followings are the main recommendations yielded by the present study :

1- Mental health professionals should adopt holistic treatment strategies that integrate spiritual factor into assessment and intervention.

2- Awareness and training programs about importance of spirituality for mentally ill patients should be implemented at psychiatric hospitals to all staff to encourage them to participate in the provision of spiritual care .

3- Psychosocial educational programs that involve social skill training , stress management , and vocational training should be provided during rehabilitation phase of hospitalized patients.

4- Recreational therapy should be included in the treatment plan for the patients to help them to use leisure

times effectively and maintain activity of daily life .

Reference

1- Videbeck Sh . Psychiatric Mental Heath Nursing . 6th ed . Philadelphia : Lippincott Williams and Wilkins Co. , 2014 ;107.

2- Fortinash K and Holoday F . Psychiatric Mental Heath Nursing . 4th ed., . Canada : Mosby Elsevier Co ., , 2008 ;137-145.

3- Weber S , Pargament K and Kunik M . Psychological distress among religious nonbelievers : A systematic review. Journal Religion Health , 2012; 51:72–86.

4- Gearing R , Alonzo D and Smolak A . Association of religion with delusions and hallucinations in the context of schizophrenia: implications for engagement and adherence. Schizophrenia Research . 2011; 126:150–163.

5- Konopack F and McAuley E . Efficacy-mediated effects of spirituality and physical activity on quality of life: A path analysis , health and quality of life outcomes . PMID , 2012 ; 10 (1) : 226 – 283.

6- Worret F . Psychiatric Nursing Care Plan . 5th ed . United States : Mosby El Sevier Co., 2007 ; 462.

7- Mohr W . Psychiatric Mental Heath Nursing , Evidence – Based Concepts , Skills , and Practices .7th ed . Philadelphia : Lippincott Williams and Wilkins Co., 2009 ; 117-127 .

8-Andrews M and Boyle J. Transcultural concepts in nursing care . 4th ed. Philadelphia : Lippincott Williams and Wilkins Co. , 2003;15

9- Koening G . Spirituality in Patient Care : Why , How , When , and What . 2nd ed. Philadelphia . Templeton Foundation . Press ; 2007;7-12 .

10- Narvaez M , Twamley W , McKibbin L , Heaton K and Patterson L . Subjective and objective quality of life in schizophrenia : Schizophrenia Research , 2008 ; 98 (1–3) : 201–208 .

11- Young W. Positive effects of spirituality on quality of life for people with severe mental illness . International Journal of Psychosocial Rehabilitation , 2012 ; 16 (2) : 62-77.

12- Tolman W and Kurtz M . Neurocognitive predictors of objective and subjective quality of life in individuals with schizophrenia: a meta-analytic investigation . Schizophrenia Bulletin , 2012 ; 38 (2) : 304–315.

13- Mohr S . Integration of spirituality and religion in the care of patients with severe mental disorders . Indian Journal Psychiatry ,2013 ; 55 (2) :205-214

14- Undrwood L and Teresi J . The daily spiritual e Scale : Development , theoretical description , reliability , exploratory factor analysis and preliminary construct validity using health related data – Analysis of behavioral medicine . 2002 ; (24) :22-33.

15- The WHOQOL Group . Development of the world health organization WHOQOL – BREF quality of life assessment . Psycho med .2004 ; 28 (3) :551-558.

16-Green J , Gardner F and Sandra S . Healing of the soul : The role of spirituality in recovery from mental illness . International Journal of Psychosocial Rehabilitation , 2009; 13 (2) : 65-75 .

17-Andrade C . Prayer and healing : A medical and scientific perspective on randomized controlled trials . Indian Journal of Psychiatry , 2009 ; 51 (4) :247-253.

18-Cabral P , Meyer H and Ames D . Effectiveness of yoga therapy as a complementary treatment for major psychiatric disorders : A meta – analysis Primary Care Companion for CNS Disorders . 2011; 13(4): 60-63.

19-Safara M and Bhatia M . The Effect of spiritual music on health in different Religious . American Psychiatry Journal , 2014 ; 17 (1) : 22-27 .

20- Basu D . Quality of life issues in mental health care . Past , Present , Future . German Journal of Psychiatry , 2004 ; 7 (3) :35-43 .

21- Shives L . Basic Concepts of Psychiatric Mental Health Nursing . 8th ed . Philadelphia : Lippincott Williams and Wilkins Co., 2012 ; 34 -48

22- Shalaby M . Relationship between spirituality and mental illness . Life Science Journal , 2014 ; 11 (2) :1-7

23- Young K . Factors predicting overall life satisfaction for People with long-term mental illness factors. International Journal of Psychosocial Rehabilitation , 2004 ; 9 (1) : 23-35.

24- Sharir D , Tanasescu M , Turbow D and Maman Y . Social support and quality of life among psychiatric patients in residential homes . International Journal of Psychosocial Rehabilitation , 2007 ; 11 (1) : 82-85.

25- Hefti R . Integrating religion and spirituality into mental health care .

Psychiatry and Psychotherapy. www.mdpi .com /journal /religions . 2011 ; 2 (2) : 611-627.

26-Chan W , Ungvari G , Shek T and Leung J . Hospital and community based care for patient with chronic schizophrenic in Hong Kong. Social Psychiatry and Psychiatric Epidemiology , 2003 ; 38 :196-203.

27 –Hansson L . Determinants of quality of life in people with severe mental illness. Acta Psychiatrica Scandinavica , 2006 ; 113 (429): 46-50.

28 –Langeland E , Wahl A , Kristoffersen K , Nortvedt M & Hanestad, B . Quality of life among Norwegians with chronic mental health problems living in the community versus the general population. Community Mental Health Journal , 2007 ; 43(4) : 321-339.

29- Norholm V , & Bech P . Quality of life in schizophrenic patients: association with depressive symptoms. Nordic Journal of Psychiatry , 2006 ; 60 (1) : 32-37.

30- Norman R Malla A , Mc Lean T, Voruganti L , Cortese L , Cheng S and Rickwoord A . The relationship of symptoms and level of functioning in schizophrenia to general wellbeing and quality of life scale. Acta Psychiatric Scand , 2000 ; 102 : 303-309.

31 –Evans S . Quality of life in mental health services. In ritner , M.S. & Awad, G.A. (Eds.), Quality of Life Impairment in Schizophrenia , 2007 .

32-Hill P . & Paragament K . Advances in the conceptualization and measurement of religion and spirituality. American nursing journals , 2008 ; 5(1) : 3-17.

33- Babaie E , Razeghi N . Comparing the effects of methadone maintenance treatment , therapeutic community , and residential rehabilitation on quality of life and mental health of drug addicts . Addict Health , 2013 ;5 (1-2):16-20.

34-Abdullah C , Ismail H , Ahmad N & Hissan , W . Generalized anxiety disorder from Islamic and western perspectives. World Journal of Islamic History and Civilization , 2012 ; 2: 44-52.

35-Koenig H , Mc Cullough M & Larson D . Handbook of Religion and Health. Oxford University Press , 2001

36- Mohamed S . Effects of a trauma healing psycho - educational program on the wellness and quality of life of mentally ill patient . Doctoral thesis .

Faculty of nursing . University of Tanta , 2011 :70 -79 .

37-Ahmed F , Darweesh A , Maximios M and Sheref . A Clinical characteristics and quality of life of schizophrenic patients . 8th International Scientific Nursing Conferences . Alexandria , 2004.

38-Adep S . The relation between quality of life and locus of control among schizophrenic out Patients . Unpublished Master Thesis . Faculty of Nursing . University of Alexandria , 2007 .

39- Harfush S . Impact of psycho - educational program on the quality of life of Patients with schizophrenia . Doctoral thesis . Faculty of nursing . University of Tanta , 2014 .

40-Akbiyik D , Berksun O , Sumbuloglu V, Senturk V, Priebe S . Quality of life of Turkish patients with depression in ankara and in berlin. Eur Psychiatry, 2008 .23:S4YS9.

41- Subodh B , Avasthi A , Chakrabarti S . Psychosocial impact of dysthymia : A study among married patients . Journal Affect Disorders , 2008 . 109:199Y204.