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CONTENS

The Relationship between Nurses' Perception of Organizational Justice and Their Organizational Commitment at King Abdullah Hospital in Kingdom of Saudi Arabia

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Abstract

Researchers have broadly defined organizational justice as "people's perceptions of fairness in organizational settings". Nurses evaluate reward allocations focusing on loyalty in terms of fairness and that these fairness perceptions, in turn, influence the level of commitment of nurses .Nurses commitment have gained more attention due to the expectation that committed nurses will act in the best interest of an organization. So the aim of this study was to investigate the relationship between nurses' perception of organizational justice and their organizational commitment. The study was conducted in a 300 beds, king Abdullah Hospital affiliated with the Ministry of Health in Kingdom of Saudi Arabia in all units (n = 13 units). The study sample was 250 nurses who were available in the selected settings at the time of data collection. Two tools were used in data collection; the first tool was Organizational Justice Questionnaire Sheet (OJQS) which is used to measure nurses' perception of organizational justices. It includes four types: distributive, procedural, interpersonal and informational justice. The second tool was Organizational Commitment Questionnaire Sheet (OCQS). This tool was used to examine nurses' perception regarding their organizational commitment. It contained three types: affective, normative and continuance commitment. The results revealed that a positive correlation was between organizational justice and organizational commitment components ($r = 0.382$, $p = <0.001$). It recommends that nurse managers should promote organizational justice by several ways, such as openly describe the fair procedures they are using and explain decisions thoroughly in a manner demonstrating dignity and respect. Besides, using unbiased, accurate information and applying decision rules consistently.

Introduction:

In today's rapidly changing work life, the study of organizational justice has emerged as an extremely popular topic in human resource management, organizational behavior, industrial –organizational psychology and may become increasingly important to nurses (**Elovainio et al, 2002).**

Organizational justice is an umbrella term used to refer to individuals' perceptions about the fairness of decisions and decision-making processes within organizations and the influences of those perceptions on behavior **(Lavelle, Rupp and Brockner, 2007; and Blader and Tyler, 2003).**

The management and marketing disciplines have traditionally

distinguished among them three types of fairness: distributive justice (fairness of outcome distributions, e.g., promotions and salary increases), procedural justice (fairness of the process by which decisions are made, e.g., performance evaluation), and interactional justice (fairness in the quality of the treatment one receives during the enactment of the procedures and policies **(Miller, Siegel and Reinsten, 2007; Brian, et al., 2006).** While, **Hess and Ambrose, (2003)** split interactional justice into two distinct types of justices: interpersonal justice which defined as the fairness of interpersonal treatment provided during the enactment of procedures and distributions of outcomes, and informational justice which defined as the fairness of explanation and information.

The assessment of organizational practice and behavior of authority figures in terms of fairness does not usually depend on how fairly the nurse was actually treated, but rather on how fairly the nurse perceives that she/he was treated **(Greenberg, 1993).** The literature on employee-employer relations shows that an employee expects the organization to treat him/her with respect ,dignity, honesty and to extend equal treatment to all members **(Ladebo, Awotunde and Saghir, 2008; Janssens, Sels, and Van den Brande, 2003).**

The importance of studying justice in the work place has been underscored by findings that nurses' perceptions of justice can result in negative nurse behaviors such as organizational retaliatory behaviors, which can be costly and have an economic impact on the organization **(Sinclair, 2005)**. Counterproductive behaviors refer to theft, sabotage, or even lawsuits against employers. We should keep in mind that organizations are comprised of human beings, and organizational actions that can have substantial effects on nurses' well-being **(Rahim et al., 2001)**.

In their study, **Ladebo, Awotunde and Saghir, (2008)** provided empirical evidence that perceived supervisor unfairness may influence an employee to engage in aggressive behavior. Studies that have examined effects of supervisory behaviors on individual employee's outcomes have come up with interesting findings. **Zellars, Tepper and Duffy, (2002)** reported that subordinates who worked with abusive supervisors performed less organizational citizenship behaviors than their non abused counterparts. Further, subordinates of abusive supervisors had less trust in their supervisors and weaker organizational commitment **(Duffy & Ferrier, 2003).**

Organizational justice research, which focuses on the role of fairness as a consideration in the workplace, has demonstrated that fair treatment has important effect on individual employee attitudes, such as satisfaction, absenteeism, and commitment **(Colquitt et al., 2001**).

Commitment in the workplace is a concept that has attracted a great deal of attention from scholars in many disciplines including industrial psychology, industrial sociology management, business administration, public administration and nursing administration (**Cohen, 2003 and Ingersoll et al., 2000).** Organizational commitment is defined as "the willingness of social actors to give their energy and loyalty to social systems, the attachment of personality systems to social relationship, which are seen as self-expressive". Another author defined commitment as a force that binds an individual to a course of action that is in relevance to a particular target **(Meyer et al. 2001).**

Meyer and Allen (1991) developed a framework that was designed to measure three different types of organizational commitment: (a) Affective commitment refers to employees' emotional attachment, identification with, and involvement in the organization. Employees with a strong affective commitment stay with the organization because they want to (b) Continuance commitment which refers to the employees' assessment of whether the costs of leaving the organization are greater than the costs of staying. Employees who perceive that the costs of leaving the organization are greater than the costs of staying remain because they need to (c) Normative commitment which refers to the employees' feelings of obligation to the organization. Employees with high levels of normative commitment stay with the organization because they feel they ought to **(Brown, 2003).**

There are many factors affecting organizational commitment which includes: identification, trust, investment of personal skills and effort, participation, feeling positive about work, voice and equity. Committed employees are more productive, and help to create a more effective work organization **(El-Shaer, 2002).** In addition, some situational factors have been linked to organizational commitment which are: (a) job characteristics (including job scope, role conflict, and role ambiguity), (b) organizational characteristics (that focus on efficiency and adaptation, as they relate to organizational effectiveness), and (c) work experience (including organizational dependability, personal importance to the organization, leadership style, social involvement, and work relationship) **(Gregersen and Black, 1992).**

Furthermore, a wide range of personal characteristics have been linked to organizational commitment such as gender, age and tenure, and education **(Randall, 1993).** The most predictable positive behavioral outcome of organizational commitment is organizational loyalty, whereas the negative aspect of the concept is the intention to leave or turn. Consequences of organizational commitment includes: the interest, the intention to remain, the stability and attendance, retention and job effort **(El-Shaer, 2002).**

The relationships between justice types and employee commitment can be readily translated to the organizational level. Organizational policies and procedures formed share the bases for the employees procedural justice perceptions, and the managers behavioral norms may be formed as a shared basis for employees interpersonal justice perceptions **(Schminke, Ambrose and Cropanzano, 2000).** These shared justice perceptions, in turn, may create a situation that promotes or inhibits positive attitudes toward supervision and employee affective commitment to the organization **(Simons and Roberson, 2003).**
So the aim of this study was to investigate the relationship between nurses' perception of organizational justice and their organizational commitment.

Materials and Methods:

Setting:

This study was conducted in all units at King Abdullah Hospital, which is affiliated to the Ministry of Health in the Kingdom of Saudi Arabia. It includes 300 beds and 13 departments named; burn, education, medical (two units), emergency, rehabilitation, haemodialysis, pediatric, Intensive care, Labor and Delivery, Surgical (three units), Neonate intensive care unit , operating theater (eight room), and outpatient department, describing three floors.

Subjects:

A purposive sampling technique was used to select the study sample of 250 nurses from those available in the selected settings at the time of data collection and meet inclusion criteria to join the study .The inclusion criteria for nurses were: working in the selected setting for at least 6 months prior to the data collection to be oriented for working conditions, and able to express opinion about organizational justice and organizational commitment.

Study tools:

Two tools were used for data collection, namely: Organizational Justice Questionnaire Sheet and Organizational Commitment Questionnaire Sheet.

First tool was Organizational justice questionnaire sheet developed by **Colquitt (2001)**. It was designed to collect data about nurses' perception of organizational justices. This tool consisted of two parts the first part covered the demographic characteristics of nurses such as: age, years of experience, unit of work, marital status, and nationality data . The second part consisted of 12 questions that cover 4 types of justices includes;

distributive 3 items, procedural 3 items, interpersonal 3 items and information 3 items .

The response was on a 5 point Likert scale that could be (almost always, greatly, moderately, slightly, almost never) which were respectively scored as 5, 4,3,2,1. Scoring system by Colquitt (2001). Interpreted as

- Higher scores (12-15) reflect higher perceived amount of the type of fairness.
- Lower scores (3-6) reflect lower perceived amount of that type of fairness.

Second tool was Organizational Commitment Questionnaire Sheet (OCQS) which was developed by Meyer and Allen (1991). It was adapted for use in this study in order to measure nurses' commitment in King Abdullah Hospital. It consisted of 18 questions that cover 3 types of commitment, includes; affective commitment 7 items, normative commitment 5 items and continuance commitment 6 items.

The response was on a 5 point likert scale that could be (strongly agree, agree, neither agree nor disagree, disagree and strongly disagree) which were respectively scored as 5, 4,3,2,1.

Methods:

Following institutional approval, the tools were tested for its content relevance and language, by 6 experts from medical staff and 6 nurse managers from King Abdullah Hospital. The necessary modifications were made. A pilot study was carried out on 25 nurses to assess the clarity of the statements and time required to complete the questionnaire. After giving consent, subjects completed the questionnaires while they were in their work settings, completing the questionnaire took about 20 minutes. Data collection, review and coding were completed during the period from March 2008 to April 2008.

Statistical analysis:

Data entry was done using Epi-Info 6.04 computer software package, while statistical analysis was done using SPSS 11.0 statistical software packages. Pearson correlation analysis was used for assessment of the inter-relationships among various scales. Statistical significance was considered at p-value < 0.05.

Results:

Table (1): shows the demographic characteristics of the study sample. Regarding the table, the highest percent of the study sample (66.4%) were at age group from 25 – 35 years, while the lowest percent of them (5.2%) were over 45 years of age. Regarding to sex of study sample, the highest percent of them (85.6%) were females. It can be

observed that the majority of study sample (62.8%) had from 1 – 5 experience years, while the minority of them (14%) had more than 10 experience years. As regard to educational qualification, the highest percent of study sample (52.8%) had bachelors' degree and the lowest percent of them (1.6%) had master degree. As regard to nationality, the highest percent of study sample (43.6%) were Filipino and the lowest percent of them (.4%) were Syrian. As regard to departments, the highest percent of study sample (20%) were working in intensive care units and the lowest percent of them (2.0%) were working in Haemodialysis

Table (2): shows the mean of the study sample perception of organizational justice and organizational commitment. As seen in this table, the total mean of nurses' perception of organizational justice was (42.98 ± 9.79). Regarding organizational justices types, the table illustrated that the highest mean of nurses' perception of organizational justices were for distributive justice (11.17 ± 3.05), whereas interpersonal justice were the lowest (10.32 ± 3.06). Meanwhile, the total mean of nurses' perception of organizational commitment was (58.15 ± 8.50). Regarding to organizational commitment types, this table explored that the highest mean of nurses' perception of organizational commitment was for affective commitment (21.95 ± 3.80), whereas nurses' perceived normative commitment as the lowest one (16.67 ± 3.04).

Table (3): shows the mean of the study sample perception of organizational justice and organizational commitment according to age. As seen in the table, the highest mean of organizational justice and organizational commitment were for nurses who were over 45 years old (47.08 ± 8.03, 61.69 ± 4.19 respectively).Whereas nurses under 25 years old were the lowest (40.41 ± 9.07, 57.10 ± 8.16 respectively). Also, the table explored that there is no statistically significant differences between nurses' age and their perception of organizational justices (P = 0.163) and organizational commitment (p = 0.380).

Table (4): shows the mean of the study sample perception of organizational justices and organizational commitment according to nationality. From the table, the highest mean of nurses' perception of justice was for Sudan nurses (54.5 ± 2.12), while the highest mean of nurses' perception of organizational commitment was for Bangladeshi nurses (64.17 ± 11.84).Whereas the lowest mean of nurses' perception regarding organizational justices and organizational commitment (35.67±2.08, 52.0 ± 4.36 respectively) go to Tunisian nurses. Generally, there is no statistically significant differences between nurses nationality and organizational justices (P = 0.534) and organizational commitment (P = 0.082).

Table (5): shows the mean of the study sample perception of organizational justices and organizational commitment according to educational qualification. As seen in this table, there is statistically significant differences between the study sample educational qualification and the mean of their perception of organizational justice (P = 0.002) and organizational commitment (P = 0.015). This table illustrated that the highest mean of nurses' perception of organizational justice and organizational commitment goes to nurses' who had Master degree (50.5 ± 5.74, 66.25 ± 9.67 respectively).Whereas nurses who had Associate degree had the lowest perception of organizational justice and organizational commitment (40.83 ± 8.93, 56.73 ± 8.46 respectively).

Table (6): shows the mean of the study sample perception of organizational justices and organizational commitment according to department. From the table, there is statistically significant differences between departments and the mean of nurses' perception of organizational justice (P = 0.007), and organizational commitment (P = 0.002). Accordingly, the table indicates that nurses working in pediatric department had the highest perception mean of organizational justice and organizational commitment (49.23 ± 9.09, 66.08 ± 11.95 respectively).Whereas nurses working in medical department had the lowest mean of perception regarding organizational justice and organizational commitment (39.29 ± 11.82, 52.94 ± 8.37 respectively).

Figure (1): Pearson correlation among scores of organizational justice and organizational commitment. As explored in this figure, there is statistically significant difference and positive correlation between organizational justice and organizational commitment components (r = 0.382, p = <0.001).

Discussion:

Organizational justice focuses on the role of fairness as a consideration in the workplace, has demonstrated that fair treatment has important effect on nurses' attitudes, such as satisfaction, commitment **(Colquitt et al., 2001, and Tekleab et al., 2005).** Research on perceived organizational support demonstrates that an organizations commitment to employees is important for maintaining higher levels of employees' commitment to their organization **(Eisenberger et al., 2001).** Researches conducted across a variety of contexts (e.g., layoffs, drug testing, and pay cuts) in both laboratory and field settings demonstrates the importance of treating nurses in a fair manner **(Konovsky, 2000).** From this point of view, the present study aimed to investigate the relationship between nurses' perception of organizational justice and their organizational commitment.

The results of the present study revealed that there were statistically significant positive correlation between nurses' perception of organizational justice and organizational commitment components. The higher levels of organizational justice, particularly distributive justice, perceptions are related to more positive organizational commitment. A similar positive correlation between perceptions of organizational justice and organizational commitment was determined by **Cohen-Charash & Spector, (2001), Colquitt, et al., (2001) and Konovsky (2000)** who examined justice at the individual level and indicated that fairness is a correlate or predictor of a number of notable organizational outcomes. They noticed that perceptions of fairness have been positively associated with favorable employee attitudes and behaviors including organizational commitment, organizational support, work performance, and trust in management. In the same line **Simons and McLean, (2000)** show that fair policies and treatment of employees in organizations may increase an organizations' capability to address the needs of its customer base.
Fair treatment of employees appears to translate into both employee retention and enhanced customer service, as employees are more committed to the organization and its goals and both employee retention and customer service satisfaction affect profitability.

The nurses at King Abdullah Hospital perceived justice distribution as the highest organizational justice. This might be due to the reason that nurses have an opportunity to correct decisions made about them in work and express their view about their pay, benefits. They also have an opportunity for promotion. Promotion is given to the nurses based on the eligibility of qualification and efficiency in maintaining the rapport at work place. Nurses perceived the situation as equitable, the right allocation rule being applied and nurses see their outcomes/input ratio as equal to others.

On the other hand, nurses in the present study perceived interpersonal justice as the lowest organizational justice .This finding may be due to the result that many nurses considered their superior treating them with less dignity and respect , not refraining from making inappropriate comments , not treated politely by superior and not provide nurses with information concerning how their outcomes are determined .In contrast, these results were opposed with the result of **Hanges, Aiken and Chen (2008)** who found that justice distributive were the lowest, whereas interpersonal justice were the highest. In addition **Cropanzano et al (2001)** suggested that employees not only consider the different types of justice (i.e., distributive, procedural, and interactional) but also consider the agent of the situation that is perceived as fair or unfair. Also, distributive justice was found to be related to such work outcomes as pay

satisfaction, job satisfaction, organizational commitment and trust in organization **(Cohen-Charash & Spector, 2001).**

In the present study, nurses at King Abdullah Hospital perceived affective commitment as the highest organizational commitment. The explanation of that may be due to the fact that nurses belong to the department, emotionally attracted and feel their department staff as part of their family. On the other hand, nurses in the present study perceived normative commitment were the lowest organizational commitment. This might be due to the reason that nurses do not feel any obligation to remain with their current hospital, feel that this hospital do not deserve their loyalty and that nurses do not feel any guilt if she /he left the hospital now In this respect, **Brown (2003)** has contented that, affective, continuance, and normative commitment were components rather than types because employees could have varying degrees of all three, (for example, one employee might feel both a strong attachment to an organization and a sense of obligation to remain. A second employee might enjoy working for the organization but also recognize that leaving would be very difficult from an economic standpoint. Finally, a third employee might experience a considerable degree of desire, need, and obligation to remain with the current employer).

Although the present study show no statistically significant difference between nurses perception of organizational justice and organizational commitment and their age groups .The nurses whose age under 25 years were least perceived organizational justice and committed to their hospital while nurses who aged were above 45 years were most perceived organizational justice and most committed to their hospital . Less commitment among younger nurses may be explained by the lack of social support, work overload, and lack of reward. This finding is consistent with that of **El Shaer (2002),** who showed no significance between nurses perception of organizational commitment and their age groups .The nurses whose age range from 20-30 years were least committed to their hospital while nurses who aged above 31 years were most committed to their hospital. With the same point of view, **Ahmad and Bakar (2003)** found that age correlates positively with organizational commitment. Older employees have significantly higher affective commitment than the younger employees. Also, **Kivimaki et al., (2005)** found that a higher level of justice was associated that older age. Men who perceived higher levels of justice were more likely to be married having higher employment grade, compared with those who perceived lower levels of justice. A higher level of justice was also associated with lower job strain and lower effort-reward imbalance. The level of justice was not significantly associated with cholesterol level, hypertension, smoking, alcohol consumption.

However, the present study revealed statistically significant differences in the mean of nurses' perception of organizational justice and organizational commitment according to educational qualifications. It indicates that the highest mean of nurses' perception of organizational justice and organizational commitment were for nurses who had Master degree. Whereas nurses who had associate degree were the lowest. In this respect, **Mathieu and Zajac (1990)** stated that educational level is reported to be negatively correlated with organizational commitment. They found that increased education can produce higher expectations for recognition and reward. This would increase the likelihood of educated employees feeling inadequately rewarded by their employers and diminishing the level of organizational commitment. Also **Kivimaki, (2005)** found that employees who perceived higher levels of justice have a higher educational level.

Furthermor, the relation of nurses' perception of organizational justice and organizational commitment and their department, the present study revealed a significant difference between them. However, the high level committed nurses and perceived organizational justice were those working in pediatric department. Whereas nurses working in medical department were the lowest. The reason for this result may be due to the fact that nurses in pediatric units feel a sense of control over their work and a sense of support from their supervisor. Also this result is supported by that of **Laschinger et al. (2001),** who stated that if nurses had access to support, information, resources and opportunities, they have high self – esteem, feel a sense of control over their work, engage in effective, efficient work behaviors and are likely to be committed to the department. In addition **Ghallab (2001),** found that the work environment that provides nurses with information openly and honestly help them to accomplish their work and increase the availability of structural power characteristics. Commitment is also influenced by a number of other variables, such as job characteristics; group leader relations, organizational characteristics (Fischer). Also, **Cohen-Charash and Spectors (2001),** meta –analysis of organizational justice research found that both components of organizational justice-procedural and distributive justice-perceptions are strongly related to supervisor satisfaction and trust in supervisor.

Conclusion:

In conclusion, the study findings point to a positive correlation between organizational justice and organizational commitment components in the study setting, as perceived by nurses. The nurses perceived justice distribution as the highest organizational justice, while

interpersonal justice had the lowest organizational justice. Among the three commitment components, affective commitment had the highest mean score, while normative commitment had the lowest score.

Recommendations:

Based on the result of the present study, the following recommendation are made

1- Nurse Managers should openly describe the fair procedures they are using and explain decisions thoroughly in a manner demonstrating dignity and respect using unbiased and accurate information.

2- Nurse managers should make sure that nurses are given adequate explanations, and treated with sincerity and respect and given a say in the decisions affecting them.

3- Decisions must be based on information that is accurate.

4- Nurse managers should assess the structures in their organizations to identify barriers to staff nurses access to information, support, supplies and opportunities in their units

5- Providing job information about hospital policies, rules, and regulations.

6- Nurse manager should focus on creating positive emotional atmosphere by setting a side time for regular confidence building sessions and providing rewards for achievements.

7- Provision of an ongoing support through feedback and positive reinforcement, discussion of nurses needs for further training or educational programs and suggestions related to job.

Table (1): Demographic Characteristics of the study sample (n = 250).

Demographic Characteristics	No.	Percent
Age in years:		
< 25	29	11.6
25 –	166	66.4
35 –	42	16.8
> 45	13	5.2
Sex:		
Male	36	14.4
Female	214	85.6
Years of Experience		
1 –	157	62.8
5 –	58	23.2
> 10	35	14
Educational qualification		
High school	50	20
Associate/2-years degree	164	25.6
Bachelor degree	132	52.8
Master degree	4	1.6
Nationality		
Indian	64	25.6
Egyptian	12	4.8
Tunisian	3	1.2
Filipino	109	43.6
Saudi	51	20.4
Bangladeshi	6	2.4
Syrian	1	.4
Sudan	2	.8
Nigerian	2	.8
Department		
Burn	7	2.8
Education	10	4.0
Medical ward	17	6.8
Emergency	30	12.0
Rehabilitation	16	6.4
Haemodialysis	5	2.0
Pediatric	13	5.2
Intensive care unit	50	20.0
Labor &Delivery	32	12.8
Surgical ward	27	10.8
Neonate intensive care unit	18	7.2
Operating room	22	8.8
Outpatient	21	8.4

Table (2): The Mean and SD of the study sample's perception of organizational justices and organizational commitment.

Items	Mean ± SD
Distributive Justice	11.17 ± 3.05
Procedural Justice	10.70 ± 4.39
Interpersonal Justice	10.32 ± 3.06
Informational Justice	10.79 ± 2.90
Total organizational justice	42.98 ± 9.79
Affective commitment	21.95 ± 3.80
Continuance commitment	19.53 ± 3.62
Normative commitment	16.67 ± 3.04
Total organizational commitment	58.15 ± 8.50

Table (3): The Mean and SD of the study sample's perception of organizational justices and organizational commitment according to age.

Age in years	Commitment	Justice
< 25	57.10 ± 8.16	40.41 ± 9.07
25 –	57.89 ± 8.43	42.77 ± 10.30
35 –	58.79 ± 9.85	44.31 ± 8.27
> 45	61.69 ± 4.19	47.08 ± 8.03
Test of significance	F = 1.029 P = 0.380	F = 1.720 P = 0.163

Table (4): The Mean and SD of the study sample's perception of organizational justices and organizational commitment according to nationality.

Nationality	Commitment	Justice
Indian	59.44 ± 8.71	41.98 ± 8.69
Egyptian	55.08 ± 4.98	45.17 ± 7.49
Tunisian	52.0 ± 4.36	35.67 ± 2.08
Filipino	56.64 ± 8.16	42.67 ± 10.98
Saudi	59.76 ± 8.92	43.88 ± 9.05
Bangladeshi	64.17 ± 11.84	45.50 ± 11.62
Syrian	62	49
Sudan	60.5 ± 2.12	54.5 ± 2.12
Nigerian	63.0 ± 4.24	44.50 ± 3.54
Test of significance	F = 1.779 P = 0.082	F = 0.880 P = 0.534

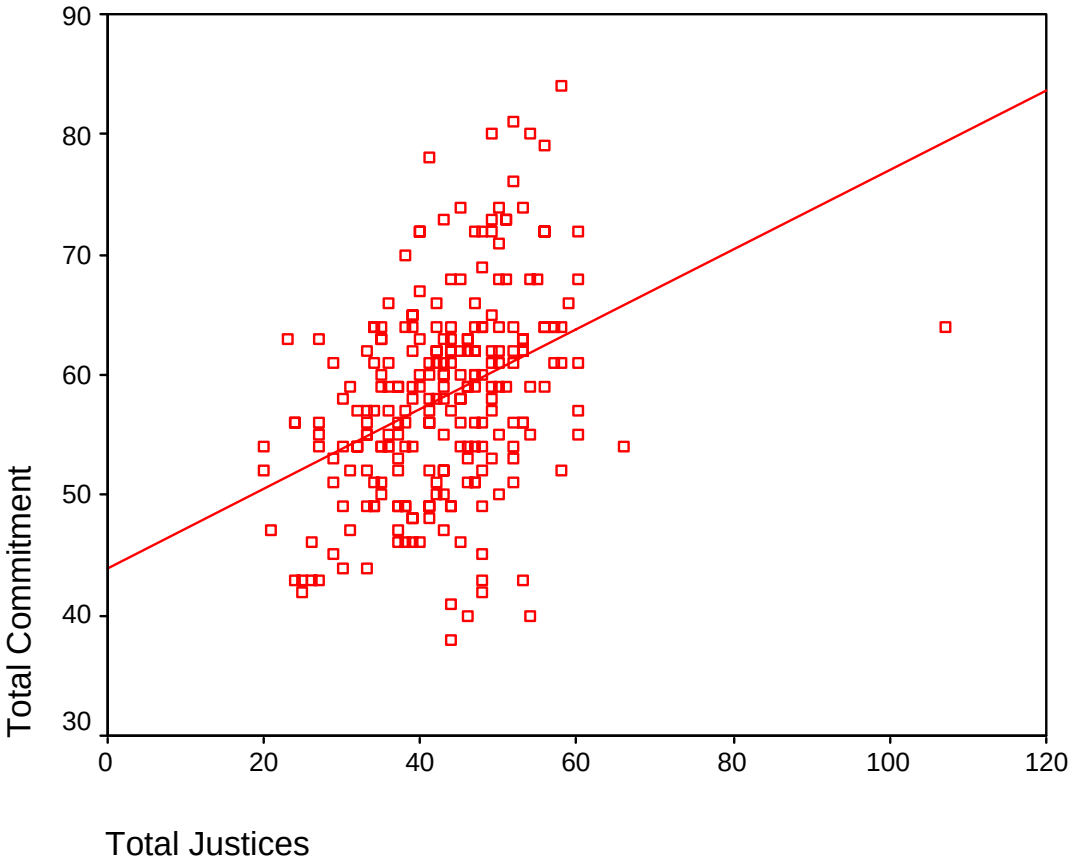
Table (5): The Mean and SD of the study sample's perception of organizational justices and organizational commitment according to educational qualification.

Educational Qualification	Commitment	Justice
High school	59.9 ± 8.51	44.82 ± 8.20
Bachelors degree	59.19 ± 8.0	45.52 ± 11.69
Associate/2-years degree	56.73 ± 8.46	40.83 ± 8.93
Masters degree	66.25 ± 9.67	50.5 ± 5.74
Test of significance	F = 3.561 P = 0.015	F = 5.183 P = 0.002

Table (6): The Mean of the study sample perception of organizational justices and organizational commitment according to department.

Department	Commitment	Justice
Burn	60.71 ± 4.15	40.14 ± 4.88
Education	59.9 ± 6.15	46.0 ± 7.48
Medical ward	52.94 ± 8.37	39.29 ± 11.82
Emergency	57.60 ± 6.93	40.40 ± 8.58
Rehabilitation	62.0 ± 9.08	42.31 ± 7.85
Haemodialysis	57.20 ± 7.12	46.40 ± 9.21
Pediatric	66.08 ± 11.95	49.23 ± 9.09
Intensive care unit	58.53 ± 7.47	40.75 ± 7.59
Labor &Delivery	59.34 ± 7.19	48.19 ± 14.12
Surgical ward	54.70 ± 7.43	40.04 ± 8.83
Neonate intensive care unit	55.17 ± 5.68	41.89 ± 8.97
Operating room	57.73 ± 9.73	45.14 ± 8.40
Outpatient	58.86 ± 11.0	42.9 ± 7.83
Test of significance	F = 2.682 P = 0.002	F = 2.347 P = 0.007

Figure (1): Pearson correlation among study sample perception of organizational justices and organizational commitment.



r = 0.382, p = < 0.001

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العلاقة بين إدراك الممرضين لعدالة المؤسسة و انتماءهم لها بمستشفي الملك عبد الله بالمملكة العربية السعودية

المقدمة :

عرف الباحثون عدالة المؤسسة بمدي إدراك الأفراد للإنصاف في المؤسسة و لقد ركز تقيم الممرضين وتوزيع المكافآت علي ولاء الممرضين للمؤسسة وكيـف إن أدراك الإنـصاف تباعا ، يؤثر علي مستوى انتماء الممرضين. لقد جذب انتماء الممرضين الانتبـاه لتوقـع أن الممرضين الأكثر انتماء سيتصرفن بأفضل صورة لمصلحة المؤسسة.

الهدف من الدراسة :

استهدفت هذه الدراسة إلي تحري مدي العلاقة بين إدراك الممرضين لعدالـة المؤسـسة و انتمائهم للمؤسسة التي يعملون بها.

طرق الدراسة:

مكان البحث : أجريت الدراسة في جميع الوحدات بمستشفي الملك عبد الله ،والتي تنتسب إلي وزارة الصحة بالمملكة العربية السعودية وتتـضمن ٣٠٠ سـرير و ١٣ قـسم (الحـروق، الباطنية،التعليم ،الطوارق،التأهيل ،الغـسيل الكلـوي ،الأطفال،العنايـة المركـزة ،الجراحـة ،العمليات و العيادات الخارجية)

عينة البحث : وقد شملت عينة البحث ٢٥٠ممرضة/ممرض من تلك المتوفرة فـي الأمـاكن المختارة أثناء جمع البيانات ،وهم الذين لديهم خبرة تزيد علي ٦ أشهر في العمل بتلك الأقسام .

أدوات البحث:

- مقياس عدالة المؤسسة من قبل كولكيت (٢٠٠١) صمم لجمع البيانات حـول إدراك الممرضين لعدالة المؤسسة . هذه الأداة شملت جزئين ، الجزء الأول يـشتمل علـي الخصائص الديموغرافية للممرضين ، الجزء الثاني يشتمل علي١٢ سؤال تغطـي ٤ أنواع من العدالة (العدالة التوزيعية – العدالة الإجرائية- عدالة المعلومات- عدالـة العلاقات بين الأشخاص.
- مقياس الولاء للمؤسسة من قبل ميروالين (١٩٩١) صمم لجمع البيانات حول انتمـاء الممرضين للمؤسسة . هذه الأداة شملت علي ١٨ سؤال تغطي ٣ أنواع من الانتمـاء (الانتماء العاطفي – الانتماء المعياري - الانتماء الاستمراري) .

النتائج : توصلت الدراسة الى مايلي :

- هناك علاقة ارتباط ايجابية ذات دلالة إحصائية بين إدراك الممرضين لعدالة المؤسسة وانتمائهم للمؤسسة.
- إدراك العدالة التوزيعية مثل أعلي أنواع إدراك العدالة لدى الممرضين بمستشفي الملك عبد الله.
- إدراك عدالة العلاقات بين الأشخاص مثل أقل أنواع إدراك العدالة لدى الممرضين بمستشفي الملك عبد الله
- الانتماء العاطفي مثل أعلي أنواع الانتماء لدى الممرضين بمستشفي الملك عبد الله.
- ا لانتماء المعياري مثل أقل أنواع الانتماء لدى الممرضين بمستشفي الملك عبد الله.
- كان أعلي متوسط لأدراك الممرضين لعدالة المؤسسة وانتمائهم للمؤسسة بالأعمار أكثر من ٤٥سنة بينما،اقل متوسط لإدراك الممرضين لعدالة المؤسسة وانتمائهم للمؤسسة بالأعمار أقل من ٢٥ سنة.
- كان أعلي متوسط لإدراك عدالة المؤسسة والانتماء للمؤسسة للممرضين الحاصلين علي ماجستير التمريض اعلي من نظيره لدي الممرضين الحاصلين علي بكالوريوس التمريض ودرجة المساعد (٢سنة).
- كان متوسط إدراك الممرضين لعدالة المؤسسة وانتمائهم للمؤسسة بأقسام الأطفال أعلي من نظيره بجميع الأقسام بينما، متوسط إدراك الممرضين لعدالة المؤسسة وانتمائهم للمؤسسة بأقسام الباطنية اقل من نظيره بجميع الأقسام .

التوصيات :

١- يجب علي رئيسات التمريض توضيح عدالة الإجراءات بالمستشفي وعرض القرارات الدقيقة، الغير متحيزة مع مراعاة احترام وكرامة الممرضين .

٢- يجب أن تتأكد رئيسات التمريض من إعطاء الممرضين التفسيرات الكافية ومعاملتهم باحترام وأخذ أرائهم في القرارات المؤثرة عليهم .

٣- يجب أن يبني اتخاذ القرارات في المؤسسة علي دقة المعلومات .

٤- يجب علي رئيسات التمريض تقيم هيكل المؤسسة لتحديد معوقات حصول الممرضين علي المعلومات ، المساندات، والفرص المتاحة لديهم .

٥ - يجب إمداد الممرضين بمعلومات حول سياسات ، قواعد ، وتعليمات المستشفي.

٦- يجب أن تركز رئيسات التمريض علي خلق جو من المشاعر الإيجابية وذلك من خلال توفير الوقت لجلسات منظمة لبناء الثقة وتزويد الممرضين بالمكافآت للانجاز الناجح .

٧- توفير الدعم المستمر من خلال برامج التدريب والتعليم والمقترحات المتعلقة بالعمل .

Competency of Clinical Instructors as Perceived by Students and Clinical Instructors Themselves at Secondary Technical Nursing School-Zagazig University

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Abstract

Clinical education is vital for the preparation of professional nurses who can function competently and independently in a diversity of nursing situations. The present study aimed to assess competency of clinical instructors as perceived by students and clinical instructors themselves at secondary technical nursing school-Zagazig University. To achieve this aim, a descriptive research design was utilized. The setting for this study was at secondary technical nursing school Zagazig University. The study sample consisted of 80 nursing students at 3rd year and 30 clinical instructors. Data were collected by using students' questionnaire sheet, clinical instructors' questionnaire sheet and researchers' observation checklist. Results of the present study revealed that, all study subjects; instructors and students as well as researchers' observation indicated that teaching competencies were the most mentioned dimension from all dimensions measuring instructors' competency. Concerning grand total competencies, the mean score as perceived by instructors, students and observations showed that instructors over evaluated themselves. Based on study result it was recommended that selection criteria for junior instructors must be followed as having strong basis of clinical and communication skills to become nurse instructor. Newly appointed clinical instructors must spend 1or 2 years in hospitals to acquire experiences in real nursing fields and to become competent on clinical nursing skills. Newly appointed instructors should pass preparatory program to prepare them to be competent. Collaboration between school system and hospital administrator should be ensured to solve training problems.

Introduction

Nursing as a profession was built on knowledge from nursing theory, research and practice, as well as humanitarian, natural and behavioral sciences. Nursing values the systematic and purposeful application of the nursing process to promote the optimal health of clients (**Thelan, et al., 1998)**. World Health Organization defined health as "a state of complete physical, mental, and social well-being and not merely the absence of disease". Illness is an acute or chronic lack of adaptation to internal and environmental stressors **(Harkness and Dinchor, 1999).**

The domains of nursing include helping, teaching, coaching, diagnostic, patient monitoring, managing rapidly changing situations,

administering and monitoring therapeutic interventions, ensuring quality of health care, and organizational and work-role competencies. Nursing domains provide a framework for problem solving and describe what the nurses do. Within the domains of nursing, the nursing process provides a theoretical framework for guiding nursing care. It includes assessment, diagnosis, planning, intervention, and evaluation of nursing practice **(Morton, et al., 2005)**.

Caring is essential to professional nurse practice and includes appreciation of human diversity and respect for the rights of others **(Sullivan and Decker, 2005).** It involves self-awareness and belief in personal empowerment. It also includes maintaining academic and practice standards to ensure the quality of the profession. Caring extends beyond the limits of patients/clients, families, groups, and communities to other nurses, other members of the health care team, and to self. Thus caring was learned through a variety of life experiences and is enhanced by experiencing caring practices among students, teachers, clients, and members of the health care team (**Haase and Miller, 1999).**

Competence means possessing knowledge, judgment, skills, energy, experience, and motivation to meet the demands of clinical practice. Competence includes the technical skills of nursing as well as skills related to problem solving, collaboration, and negotiation. Some of the attitudes needed to become competent are inquisitiveness, willingness to seek help, and an appreciation of lifelong learning. Cultural competence was defined as "care that is sensitive to issues related to culture, race, and gender", and is demonstrated by the ability to implement appropriate nursing care within the context of an individual or community values and health beliefs **(Bozzo and Minarik, 2003).**

Teaching and learning refers to dynamic and interactive process designed to integrate knowledge research with professional nursing practice. Teaching and learning are facilitated when both students and faculty are actively engaged in the process **(Jefferys, 2005)**.

Nursing care may be provided by a variety of practitioner. One of the nurse categories who provide nursing care to patients in different health care facilities is the diploma nurse (**Smeltzer and Bare, 2004).**

Schools of nursing provide diploma programs of nursing education, which prepare competent generalists in the professional practice of nursing within the context of community needs **(Seng, 2000).** Nursing students are unique individuals who enter nursing with diverse characteristics and experience. It is responsibility of the student to actively pursue knowledge and experience and to develop intellectual curiosity with a spirit of inquiry as a basis for lifelong learning (**King & Hibbison, 2000).**

Clinical instructors are qualified nurses who have advanced training or experience that qualifies them to teach nursing skills. They often specialize in a particular area of nursing practice such as long term care, surgery, pediatrics, psychiatry, or case management. Nurse instructors may work at colleges or universities, or may be hired to provide training and continuing education for nursing personnel at healthcare facilities **(Kim, 2004)**.

Nurse educators combine clinical expertise and a passion for teaching into rich and rewarding careers. These professionals, who work in the classroom and the practice setting, are responsible for preparing and mentoring current and future generations of nurses. Nurse educators play a pivotal role in strengthening the nursing workforce, serving as role models and providing the leadership needed to implement evidence-based practice **(William, 2006).**

Typical responsibilities of the nurse educator include classroom instruction, laboratory work, and/or coordinating, supervising and evaluating student's interaction with patients in clinical settings. They may also be expected to assist in recruiting and job placement activities for students; attend workshops and clinical seminars; develop curriculum and continuing education programs; and administer examinations, evaluate student progress, and maintain student records **(Detornyay, 2002).**

Significance of the study:

Assessing the effectiveness of clinical instructors' role in terms of competencies is important to maximize their strengths and overcome their weaknesses.

Aim of study:

The aim of the study was to assess the competency of clinical instructors as perceived by their students and the clinical instructors themselves, at secondary technical nursing school-Zagazig University.

Subjects and Methods:

Research design: The present study used a descriptive comparative design.

Setting: The study was conducted in secondary technical nursing school at Zagazig University.

Subjects: Two groups of subjects were included in the study namely, all nursing students enrolled at third year and their clinical instructors.

1- A total number of 80 students nurse from secondary technical nursing school.

2- A total number of 30 clinical instructors from technical nursing school were included in the study. They were actively involved in clinical teaching.

Tools for data collection:

A questionnaire sheet was developed by the researcher to assess competency of clinical instructors. The questionnaires were based on relevant review of literature, namely **(Dunn & Hansford, (1997), Essa and Adam (1998), Allen, Bowers, & Dickkelman, 1999 Gaber (2004) and (Qaap, 2007).** Which used as:

1-Instructors questionnaire sheet: This tool included two parts:

Part I: Demographic characteristics: age, years of experiences, marital status, nursing educational level, job title and training sites.

Part II: Composed of 71 items grouped into 6 dimensions as follow:

1- Teaching competency (1-20) 20 items.

2- Clinical skills (21-28) 8 items.

3- Personality traits (29-40) 12 items.

4- Collaboration role (41-50) 10 items.

5- Role modeling (51-63) 13 items.

6- Facilitator role (64-71) 8 items.

2-Students' questionnaire sheet:

The first part: Demographic characteristics Such as age, marital status and academic status.

The second Part: The same part II of the instructor's questionnaire was used to identify the students' view of the competency of their clinical instructors.

The third part: Observation checklist: Was developed by the researcher to assess and observe clinical instructors competency. The items of the observation checklist were the same as the questionnaire sheet that described clinical instructors' behavior in training sites.

The questionnaire sheet and observation check list were revised and adapted by nurse expertise to assess its content validity. Responses of participants were measured on a five-point licker scale that range from 5

(maximum score) for "strongly agree" to 1 (minimum score) for "strongly disagree".

Administrative design:

Official permissions were obtained from managers of secondary technical nursing school and Zagazig University Hospitals using proper channels of communication.

Pilot study (a sample of 8 students and 3 clinical instructors) were randomly selected to conduct pilot study to test the applicability of the tools and to estimate the time consumed in their application.

Methods:

The researcher started by explaining the purpose of the study briefly to the students in the classroom during break time. Clinical instructors' sheets were individually distributed to the teachers. No modifications were needed for both tools. Therefore, the pilot sample was included in the total sample. The time consumed to answer each questionnaire sheet ranged from 30-45 minutes. Sheets were collected in the same day. Data collection took about one month. Respondents were advised not to write down their names to ensure confidentiality.

Intermittent observation sessions were done twice per week two hours in every session to observe behavior of clinical instructors during clinical training. Each item was observed 3 times both in nursing laboratory and in clinical areas. Data collection lasted for 2 months during summer training from first of June to end of July 2007.

Statistical design:

Data were verified prior being computerized. The statistical package for social sciences (spss ver 11.0) was used to analyze collected data. Descriptive statistics were used e.g., mean, standard deviation, frequency and percentage. Test of significance were applied to test the study questions (i.e., Independent T-test and one way analysis of variance (ANOVA) and Pearson's correlation coefficient were applied between quantitative variables, significant level values was considered at $p \leq 0.001$.

Results:

Socio demographic characteristics of clinical instructors. More than half (53.3%) of clinical instructors at the age group 30 < 40 years with a mean ± SD of (37.1 ± 6.9) years, while (20%) of their age ranged from 20 < 30 with a mean age (37.1 ± 6.8145). Regarding Years of experience (36.7%) of them ranged from 5<10 with a mean ± SD (15.566 ± 5.6)

years. Most clinical instructors (93.3%) were married. More than half of the clinical instructors (53.3%) had specialty diploma in nursing in addition to the nursing diploma. As for job title (46.7%) was nursing teachers. Training sites include university hospitals and schools skill lab (43.3%).

Table (1): illustrate Clinical instructor's competency scores (mean ± SD) related to first dimension (teaching competence) as perceived by instructors shows that, the highest score was for " Answer students' questions " (4.73 ± 0.449). While the lowest score was for: Prepare educational meeting and conferences effectively (3.00 ± 1.203).

Teaching competency as perceived by students shows that, the highest score was for " Answer students questions" (4.22 ± 0.594). While the lowest score was for " Prepare educational meetings and conferences effectively " (3.125 ± 1.140).

Teaching competence through observed instructors' competency shows that, the highest score was for: Answer student's questions (4.06 ± 0.549). While the lowest score was for: Prepare educational meeting and conferences effectively (1.73 ± 0.621).

There was agreement with highest scores regarding "Answer the students' questions" among clinical instructors self-perception, students perceptions, and the observed instructors competency. In addition, there was an agreement between clinical instructors and students' perception regarding the item of "Prepare educational meetings and conferences effectively" .This relationship had the lowest scores and was also supported by the observed scores.

Table (2): Clinical instructors competency scores (mean ± SD) related to the second dimension (Clinical skills) as perceived by instructors shows that, the highest score was for " Have the ability to apply nursing skills on real patients " (4.80 ± 0.406). While the lowest score was for "Evaluate students at clinical field on real patients" (2.933 ± 1.38).

Clinical skills as perceived by students' perception show that, the highest score was for " Follow up the progress of students training " (3.862 ± 1.07). While the lowest score was for " Evaluate students at clinical field on real patients (2.80 ± 1.37). Clinical skills through observed competency show that, the highest score was for: Apply all subject content (4.70 ± 0.466). While the lowest observation was for" demonstrate technical skills in nursing in front of students " (2.355 ± 1.064). It was found that there was agreement about clinical instructors' competency in "Evaluate students at clinical field on real patients" among clinical instructors self-perception and students perception. This item gives the lowest score.

Table (3): Comparison of total mean scores of instructors' self-perception and students' perception**,** according to the table it was revealed that instructors self-perception had the highest score (83.23± 9.88) in teaching competence, while the lowest score (31.97±5.02) was in facilitator role. Student's perception had the highest score (74.63±10.93) in teaching competence, while the lowest score (28.0±5.7) was in clinical skills. It was observed that there was agreement between instructors self perception and student perception about teaching competence. This item was given the highest score.

Table (4): Comparison of total mean scores of instructors' self-perception and observed competency. As regard instructors self-perception the highest score (83.23±9.88) was given to teaching competence, and the lowest score (31.966±5.02) was given to facilitator role, while in observed competency, the highest score (64.11 ± 6.39) was given for teaching competence and the lowest score (25.62 ± 2.44) was given for facilitator role. There was an agreement between instructors as self-perception and observed competency in relation to teaching competency they given it the highest score and facilitator role, they given it the lowest score.

Table (5): Comparison of total means score of students' perception and observed competency. It was revealed that the highest score (74.63±10.93) was given for teaching competence through student perception, while their perception about clinical skills was the lowest score (28.0 ± 5.7). In relation to observed competency, the highest score (64.11 ± 6.395) was given for teaching competence while the lowest score (25.62 ± 2.44) was given for facilitator role, when comparing both student perception and observed competency it was observed that teaching competency had the highest score.

Table (6): Shows that grand total competence mean scores as perceived by clinical instructors were the highest scores (296.03 ± 32.4818), while observed competencies of clinical instructors had the lowest scores (231.022 ± 16.259). This difference was statistically significant approved.

Table (7): Correlation matrix of clinical instructors' age and years of experience with their total competency scores. The finding revealed that there is no correlation found between age and years of experience with total competency scores.

Discussion:

Clinical practices have been acknowledged as being "the heart" of nursing education that combines art and science. Nursing can be defined as a practice profession in which the student applies theory learned in the classroom, but must learn to do so with patients in real situations often

involving life and death matters (**Rodger, 1998)**. Hospitalized patients require nursing care throughout their illness the basic nurse training designed to educate the student to understand the process of illness and to contribute skillfully to the patients well being **(Dixon, 2003).**

Nurse educators play a pivotal role in strengthening the nursing workforce, serving as a role model and providing the leadership needed to implement evidence-based practice. They help students and practicing nurses to identify their learning needs, strengths and limitation, as well as select learning opportunities that will build on strengths and overcome limitations **(Knoop, 1995).** The present study aimed to assess the competency of clinical instructors as perceived by students and clinical instructors themselves at secondary technical nursing school – Zagazig University.

Regarding socio demographic characteristics of clinical instructors the findings revealed that the age of clinical instructors ranged from 20 to 50 years. The highest percent of clinical instructors were in the age group 30 < 40, and this finding reflected the school system that mandates every clinical instructor to keep in contact with training site because there is no promotion ladder in nursing schools even if clinical instructors' age is about fifty years, the teacher should be responsible about a group in training sites. Therefore, the majority of clinical instructors had years of experience ranging from 5 < 10 years, and those having experience from twenty years or more, represent about one third of the study sample.

Regarding nursing educational level of clinical instructors the present study revealed that about half of clinical instructors had specialty diploma, and the least percent had baccalaureate degree. This finding was supported by **Merrbeau, (1992)** who declared that, a clinical instructor is any nurse who teaches nursing practice to undergraduate students and be responsible for the bulk of student nurses education. On the contrary, **Ellen, (2004)** stated that nurse educators should be prepared at the master's or doctoral level and practice as faculty member in colleges, hospital based schools of nursing or technical schools.

Regarding teaching competency, the study clarified that the clinical instructors competency in "Answer the students questions" through clinical instructors self perception, students perception and observation was given the highest score. This finding might be due to the fact that one of the important competencies of any teacher is answering student's questions which might reflect on their self respect and self image in front of students. Also instructors and student's perception as well as observation revealed the same result regarding the item of "prepare educational meetings and conferences effectively". This might be due to the fact that the instructors didn't know how to prepare these meetings

because they didn't attend training programs to develop their teaching abilities since their graduation.

When observing the item "Attend training programs regularly", it was observed that it was scored low. The lowest scores were given to "Prepare educational meetings and conferences effectively". There was an agreement of instructors and students perception and researchers' observation which support the previous finding. This result agrees with **Gaber (2004)** who mentioned that when clinical instructors attend clinical conferences, this makes them play an important role in facilitating clinical learning.

Concerning clinical skills of clinical instructors in relation to self perception and students' perception, the findings of this study revealed that "Evaluate students at clinical field on real patients" had the lowest scores. It might be due to absence of clinical exams in the school. Furthermore, observed competency of clinical instructors had the lowest scores for the item "Demonstrate technical skills in nursing in front of students". Followed by the item "Have the skill to apply nursing skills on patients" in relation to students perception and observed competency.

Severinsson (1998) reported that clinical instructors are faced with two different demands, the competency in nursing and competency in teaching. Nurses who are skillful practitioners are not necessarily competent teachers. Similarly, effective classroom teachers may not possess the clinical competency expected of proficient parishioners. Clinical instructors were over estimating themselves. This might be due to the fact that clinical instructors work as teachers in the school immediately after graduation without strong clinical experience and /or training preparation. This finding was in agreement with **Cronenwett & Redman (2003)** who reported that critical appraisal of clinical teaching role of faculty instructors suggest that teachers may have inadequate knowledge for practice and they remain rigidly bound to the confines of the course curriculum. Also, this finding is congruent with that of **Abd-El Alim (2007)** who indicated that clinical teaching program was effective in improving clinical teaching performance of clinical instructors.

Concerning comparison of total mean scores of instructors self perception, students perception and observed competency of all dimensions the study findings revealed that, teaching competency was ranked as the highest dimension among all dimensions . This finding might be due to the fact that more than two thirds of the study group had preparation in education through specialty diploma in teaching and about one third of them had master degree and both programs involved theoretical and practical methods of teaching and curriculum development which help clinical instructors to be competent in teaching.

The finding was congruent with **Khatab (1995)** and **Gaber (2004)** who illustrated that teaching competency of instructors is the most important factor affecting learning in the clinical experience as perceived by the majority of nursing students and clinical instructors themselves.

Furthermore, role model was ranked as the second competency through clinical instructors self perception, students perception and through observed competency. They perceived the clinical instructors to function as professional role model. **Oliver** and **Florence (2002)** stated that role modeling has long been recognized in nursing as one of the most powerful ways in which learning occurs in the clinical setting and facilitates application of principles learned in the classroom.

In addition, comparison of total mean scores of instructors self perception and students perception of all dimensions in relation to clinical skills revealed low scores in relation to other dimensions. This finding was supported by **Kelly (1998)** in a study which showed that the main factors leading to inadequate performance of nursing instructors in the clinical setting included presence of conflict, stress and anxiety in the ward teaching situation, feeling as a guest on the ward, and having little control over patients or the educational process there. On the same line **Fey, (2000)** and **Abd-ElAlim (2007)** found that student nurses noted that increase work load of the clinical teacher result in decrease in communication, clinical knowledge and skills, quality of patient care and team work.

In relation to grand total competency the present study concluded that the instructors overvalued themselves, and the observed competency had the lowest score while students perception comes in between the two values .this difference was statistically significant. **Peterson (1995)** concluded that students are good sources of information about their instructors because they know their own situation well, have closely and recently observed a number of instructors.

In relation to correlation matrix between clinical instructors age and years of experience with their total competency scores, it was found that there was no statistically significant correlation between age and years of experience with total competency scores of clinical instructors self perception. This finding agreed with (**Mohamed et al, 2001** and **Hashim, 2000)** who found a highly statistically significant difference between nurses qualifications and their knowledge and practice. The same result was in disagreement with **Gaber (2004)** who reported that there were statistically significant correlation between years of experience and clinical instructor's effectiveness.

Conclusion

This study was done to assess the competency of clinical instructors as perceived by students and clinical instructors themselves at secondary technical nursing school-Zagazig University. Based on the most important findings of the study, it can be concluded that all study subjects either instructors self perception or students perception, and observed competency considered teaching competency as the best competency in the rank of all dimensions of clinical instructors competencies. While clinical skills of clinical instructors were the least ranked competency. In relation to competencies perceived by instructors themselves versus students and the observed competencies, it was concluded that, the clinical instructors overvalued themselves in relation to both students perception and observed competencies.

Recommendation

Based of findings of this study, the following recommendations can be deduced:

1- Selection criteria of junior instructors must be followed as having of strong basis of clinical and communication skills to become nursing instructors.

2- Clinical instructors must spend 1or 2 years in hospitals to acquire experiences in real nursing fields and become competent on clinical nursing skills.

3- Instructors should pass preparatory program to prepare them to be competent teachers focusing on preparation of educational meetings, evaluation of students at clinical field, decision making, and preparation of periodical meeting with nursing staff and students.

4- A spirit of mutual cooperation should exist between the teacher and students in order to be able to work in team.

5- Competent evaluation system should be developed in the school to improve the quality of clinical instructor's performance.

6- A Plan should be designed to empower clinical instructors and ensure participation in decision making.

7- Clinical instructors must be available continuously to provide guidance and support during student's clinical performance.

8- Collaboration between school system and hospital administrator should be ensured to solve training related problems.

Table (1): Mean score of Instructors' and students' perception of clinical instructors' teaching competency versus observation

Items	Instructors self perception	Students' perception	observed competency
	No = 30	No = 80	No = 30
	$\overline{X}$ ± SD	$\overline{X}$ ± SD	$\overline{X}$ ± SD
1- Answer the students' questions.	4.73 ± 0.449	4.22 ± 0.594	4.066 ± 0.549
2- Prepare educational meeting and conferences effectively.	3.00 ± 1.203	3.125 ± 1.140	1.73 ± 0.621
3- Have basic knowledge for educational process.	4.533 ± 0.507	4.125 ± 0.643	3.777 ± 0.614
4- Relate theoretical knowledge to practice.	4.533 ± 730	4.075 ± 1.17	2.644 ± 0.486
5- Act as a resource person for information during clinical practice.	3.90 ± 1.295	3.462 ± 1.10	2.644 ± 0.486
6- Utilize learning opportunities to promote students knowledge and skills.	3.66 ± 1.15	3.437 ± 1.07	2.766 ± 0.897
7- Ask questions relevant to clinical practice under consideration.	4.40 ± 0.621	3.63 ± 1.07	3.55 ± 0.822
8- Communicate knowledge to students in a good manner.	3.93 ± 1.172	3.95 ± .825	2.311 ± 0.630
9- Evaluate the level of students understanding.	4.66 ± 0.479	3.537 ± 1.19	3.68 ± 0.705
10- Share in oral examination to invert real experiences at the field.	4.23 ± 1.00	3.625 ± 1.15	3.33 ± 0.727

Table (1) (cont.): Mean score of Instructors' and students' perception of clinical instructors' teaching competency versus observation

Items	Instructors self perception	Students' perception	observed competency
	No = 30	No = 80	No = 30
	$\overline{X}$ ± SD	$\overline{X}$ ± SD	$\overline{X}$ ± SD
11- Explain steps of procedure before starting application.	4.20 ± 0.961	4.162 ± 0.818	2.444 ± 1.122
12- Attend training programs regularly.	3.73 ± 1.172	3.36 ± 1.22	2.188 ± 0.681
13- Explain method of evaluation to students.	4.33 ± 0.711	3.55 ± 1.01	3.62 ± 0.676
14- Have adequate theoretical knowledge.	4.666 ± 1.26	3.762 ± 0.875	3.95± 0.565
15- Explain objectives at the beginning of the course.	4.233 ± 1.006	3.70 ± 1.17	3.455 ± 0.972
16- Speak in clear and heard voice during explanation.	3.80 ± 1.063	3.85 ± 0.995	3.366 ± 0.602
17- Diversify questions to students through training.	4.43 ± 0.679	3.937 ± 0.932	3.044 ± 0.592
18- Encourage students to participate in discussion during application in the laboratory.	4.40 ± 0.814	3.65 ± 1.191	3.811 ± 0.755
19- Interested in how the students learn.	4.566 ± 0.679	3.875 ± 1.09	3.33 ± 0.581
20- Use different teaching methods during session.	4.266 ± 0.785	3.58 ± 1.098	3.533 ± 0.869

Table (2): Mean score of instructors' and students' perception of instructors' clinical skills versus observation

Items	Instructors self perception	Students' perception	observed competency
	No = 30	No = 80	No = 30
	$\overline{X}$ ± SD	$\overline{X}$ ± SD	$\overline{X}$ ± SD
21- Help all students to acquire skills during clinical training.	4.26 ± 0.639	3.80 ± 1.083	3.45 ± 0.755
22- Demonstrate technical skills in nursing in front of students.	4.133 ± 0.973	3.587 ± 1.25	2.355 ± 1.064
23- Evaluate students at clinical field on real patients.	2.933 ± 1.38	2.80 ± 1.37	3.611 ± 0.547
24- Ensure the effectiveness of equipment before starting application.	4.30 ± 0.952	3.50 ± 1.018	4.088 ± 0.537
25- Encourage students to use up-to-date tools and equipment.	4.03 ± 1.09	3.625 ± 1.05	3.377 ± 0.426
26- Follow up the progress of students training.	4.50 ± 0.629	3.862 ± 1.07	4.50 ± 0.629
27- Apply all subject contents.	4.70 ± 0.466	3.650 ± 0.915	4.70 ± 0.466
28- Have the ability to apply nursing skills on real patients.	4.80 ± 0.406	3.15 ±1.185	2.50 ± 0.809

Table (3): Comparison of instructors' self-perception and students' perception utilizing T-test

Dimensions	Instructors self perception		Students' perception		T-test for equality of means		
	Max score		Max score		T	df	P ≤
1-Teaching competence	98.00	83.23±9.88	98.0	74.63±10.93	-3.764	108	**0.00
2-Clinical skills	40.0	33.66±3.72	40.0	28.00±5.71	-5.038	108	**0.00
3- Personality	60.0	49.30±5.35	60.0	42.44±8.53	-4.105	108	**0.00
4-Collaborator	50.0	42.40±5.72	48.0	35.91±7.09	-4.486	108	**0.00
5- Role model	65.0	55.47±7.41	61.0	48.83±7.35	-4.202	108	**0.00
6- Facilitator	40.0	31.97±5.03	40.0	30.86±5.24	- 0.99	108	0.323

***P<.01*

Table (4): Comparison of instructors' self-perception and observed competency utilizing T- test

Dimensions	Instructors self perception		Observed competency		T-test for equality of means		
	Max score		Max score		T	df	P ≤
1-Teachingcompetence	98.00	83.23±9.88	77.67	64.11±6.40	-8.897	58	**0.000
2- Clinical skills							
3- Personality	40.0	33.66±3.717	33.33	26.18±2.95	- 8.626	58	**0.000
4- Collaborator	60.0	49.30±5.35	47.67	38.76±4.00	- 8.633	58	**0.000
5- Role model	50.0	42.40±5.72	30.0	31.65±2.83	- 9.208	58	**0.000
6- Facilitator	65.0	55.46±7.408	57.0	44.67±4.18	- 6.946	58	**0.000
	40.0	31.966±5.02	30.33	25.62±2.44	- 6.215	58	**0.000

***P<.01*

Table (5): Comparison of students' perception and observed competency.

Dimensions	Students perception		Observed competency		T-test for equality of means		
	Max score		Max score		T	df	P ≤
1-Teachingcompetence	98.0	74.63±10.93	77.67	64.11±6.40	4.954	108	**0.000
2- Clinical skills	40.0	280.0±5.71	33.33	26.18±2.95	1.652	108	0.101
3- Personality	60.0	42.44±8.53	47.67	38.76±4.00	2.259	108	0.026
4- Collaborator	48.0	35.91±7.09	30.0	31.65±2.83	3.185	108	0.002
5- Role model	61.0	48.83±7.35	57.0	44.67±4.18	2.921	108	0.004
6- Facilitator	40.0	30.86±5.24	30.33	25.62±2.44	5.248	108	**0.000

***P<.01*

Table (6): Grand total mean scores of competency as perceived by instructors and students and observed competency.

	$\overline{X} \pm SD$	F	P. value
Instructors self perception	296.03 ± 37.11		
Students perception	260.68 ± 44.85	26.363	≤ 0.000
Observed competency	231.022 ± 22.80		

Table (7): Correlation matrix of clinical instructors' age and years of experience with their total competency scores.

	Age raw instructors	Years of experience	Teaching competence total score	Clinical skills total scores	Personality total scores	Collaboration total scores	Role model total scores	Facilitator total scores	Grand total scores
Age raw instructors									
Year of experience	0.827 0.000								
Teaching competency total score	0.145 0.444	0.146 0.440							
Clinical skills total scores	0.320 0.085	0.296 0.112	0 .826* 0.000						
Personality total scores	0.211 0.263	0 .171 0.367	0.793* 0 .000	0.702* 0.000					
Collaboration total scores	0.102 0.591	0.079 0.698	0 .844* 0 .000	0.706* 0.000	0.815* 0.000				
Role model total scores	0.166 0.380	0.142 0.454	0.733* 0 .000	0.666* 0.000	0.701* 0.000	0.898* 0.000			
Facilitator total scores	0.257 0.171	0.255 0.173	0.401* 0.028	0.394* 0.031	0.559* 0.001	0.641* 0.000	0.758* 0.000		
Grand total scores	0.211 0.263	0.192 0.311	0.908* 0.000	0.819* 0.000	0.876* 0.000	0.953* 0.000	0.918* 0.000	0.700* 0.000	

** Significant correlation*

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كفاءة مدربات العملى من وجهة نظر الطالبات و المدربات بالمدرسة الثانوية الفنية للتمريض- جامعة الزقازيق

مقدمـــــة:
يعتبر مدرس العملي أول من يعمل على تحسين الجودة من خلال التأكد من المحافظـة علـى مستوى أداء التدريبات العملية. فهو الشخص الذي يهتم بتعلم الطالبات وله دور أساسـي فـي تعليم الطالبات كيفية التطبيق العملي للمحتوى النظري فى أماكن التدريب المختلفة. لذلك فـان التدريس العملي هو دور مركب ومزدوج. وفى الوقت الحالي توجد فجـوة بـين التـدريس النظري والتدريب العملي والسبب الأساسي لهذه الفجوة هو انفصال المؤسسة التعليمية الصحية عن المؤسسات التي تقدم الرعاية الصحية. لذلك فإن تقييم كفاءة مدربات العملي مهم من أجل تحفيزهم على تعظيم نقاط الإجادة والتغلب على نقاط الضعف .

الهدف من الدراسه:
تهدف الدراسة إلى تقييم كفاءة مدربات العملي من وجهة نظر الطالبات والمـدربات أنفـسهن وذلك بالمدرسة الثانوية الفنية للتمريض- جامعة الزقازيق.

عينه البحث:
اشتملت الدراسة على جميع طالبات الفرقة الثالثة وعددهن٨٠ طالبة بالإضافة إلـى مـدربات العملي وعددهن٣٠ مدربة.

أدوات وطرق البحث:
١-إستماره استبيان لتقييم كفاءة مدربات العملي من وجهه نظر الطالبات والمدربات.
٢ -استمارة ملاحظة لتقييم سلوك المدربات أثناء التدريب العملي ويتم اسـتخدامها بواسـطة الباحثة.

نتائج البحث:
نسبة ٥٣,٣% من مدربات العملي تتراوح أعمارهن من ٣٠الى اقل من ٤٠ عام . سـنوات الخبرة تتراوح من ٥ إلى اقل من ١٠ سنوات بنسبة ٣٦,٧ %. مستوى تعليم المدربات كـان بنسبة ٥٣,٣% دبلوم تخصص في التمريض. كان هناك توافق بين آراء المدربات والطالبات وكذلك الملاحظة بالنسبة لعنصر " تجيب المدربة على أسئلة الطالبات " وكان هو الأعلى فى درجات التقييم وعنصر" تعد المدربة الندوات والمؤتمرات التعليمية بكفاءة "كان هو الأقل من حيث التقييم . اتفقت آراء المدربات والطالبات على أن عنصر " تقييم المدربة الطالبات علـى مرضى حقيقيين" وكان هو الأقل فى التقييم بالنسبة لباقي العناصر التي تقيس كفاءة التعلـيم الإكلينيكي .

- اختلف رأي الطالبات عن التقييم من خلال الملاحظة بالنسبة لعنصر " القدرة على صنع القرار " حيث أعطت الطالبات هذا العنصر أعلى تقييم وأعطى نفس العنصر أقل تقييم من خلال ملاحظه الباحثة.
- اتفقت آراء الطالبات والملاحظة على إعطاء عنصر " تعقد اجتماعات دورية مع هيئة التمريض والطالبات لمناقشة المشاكل المتعلقة بالتدريب " أقل تقييم .

- إتفاق أراء الطالبات والملاحظة على أن عنصر " تكون المدربة قدوة حسنة للطالبات"هو أعلى كفاءه لدى المدربات
- أعطت المدربات والطالبات عنصر " تقسم المدربة الطالبات إلى مجموعات صغيرة للتأكد من التطبيق العملي لكل طالبة" أكثر تقييم. وعنصر " تستخدم المدربة الأمثلة والوسائل التعليمية خلال التدريب العملى" أقل تقييم

الخلاصة :

- اتفقت أراء كل من المدربات والطالبات وكذ لك من خلال الملاحظة على أن كفـاءة التدريس يكون تقييمها فى مرتبة أعلى لدى مدربات المدرسة تليها القدوة الحسنة .
- اتفقت أراء المدربات والطالبات مع نتيجة ملاحظة أداء المدربات على أن المهـارات الإكلينيكية لمدربات العملي ضعيفة.
- فى المجمل كان تقييم المدربات لأنفسهن هو الأعلى فى حين كانت الملاحظة اقل في التقييم . وجاء رأي الطالبات في المنتصف بين رأي المدربات ورأي الملاحظة.

التوصيـ ـ ـ ـات:

في ضوء هذه النتائج فإن الدراسة توصي بما يلي :

١. إتباع مواصفات لاختيار المدربات الجدد مثل ضرورة إجادة المهارات الإكلينيكية مهارات و الاتصال لكي تصبح مدربة للتمريضمع الالتزام بقضاء فترة معينة فـي المستـشفيات (عام أو عامين) لاكتساب خبرات حقيقة لتحسين كفاءتها في تطبيق المهارات التمريضية.

٢. عمل دورات تأهيلية للمدربات الجدد لإعدادهن لكي يكونوا مدرسات كفء مـع التركيـز على "إعداد الندوات التعليمية – تقييم الطلاب في أماكن التدريب العملي والقـدرة علـى اتخاذ القرار وكيفية عمل ندوات مع الممرضات والطالبات".

٣. تطوير نظام التقويم في المدرسة لتحسين الجودة فى أداء مدربات العملى.

٤. عمل خطة لتحفيز المدربات مثل المشاركة في صنع القرار.

٥. التعاون بين المدرسة والمستشفى في حل المشكلات المتعلقة بالتدريب .

Nurses' Practice Related to Invasive Procedures in Intensive Care Units at Zagazig University Hospitals

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Abstract:

Background: Quality patient care is provided through sustaining excellence in nursing services. The delivery of critical care that is both appropriate and of the highest quality possible is a major concern of critical care nurses who provide or direct this care. AIM: to assess nurses' knowledge and practice related to standards of nursing care for invasive procedures in intensive care units at Zagazig University Hospitals. **Research question**: Do nurses have adequate knowledge about invasive procedures? Do nurses follow the standard of nursing care while practice invasive procedures in intensive care units? **Subjects and Methods**: This descriptive study was carried on a sample of 85 nurses working at emergency and surgical ICUs at Zagazig University Hospitals. Tools for data collection included a self-administered questionnaire, an observation checklist and guidelines sheet for the nurses it contains of all information about four invasive procedures. **Results**: Nurses age ranged between 17 and 33 years with experience mean ±SD 4.2±3.3 years, and 89.4% of them had diploma degree in nursing. Nearly all nurses had satisfactory knowledge regarding IV cannula and urinary catheter, but only 61.2% had satisfactory knowledge related to enema. Adequate practice was very low especially for nasogastric tube (3.5%), and urinary catheter (18.8%). Diploma nurses had more satisfactory knowledge about enema ($p=0.025$). Attendance of training programs was leading to increase nurses' knowledge about nasogastric tube ($p=0.048$). Bachelor degree nurses had more adequate practice in nasogastric ($p<0.001$) and enema ($p=0.033$) procedures. **Conclusion and recommendations**: Nnurses' knowledge about the four studied invasive procedures in ICUs is better than their performance. Higher nursing qualification and attendance of previous training courses had a positive impact. It is recommended that the nursing orientation and in-service training programs stress on practical training. Also, diploma nurses would need more training. Other reasons underlying the poor performance need to be investigated and corrected.

Introduction:

Quality has always been a primary concern in the health care field. In recent years, the quality of service delivery has become an important focus of attention for everyone employed in health care **(Yorder–Wise, 2007)**. Nurses, as well as all other health care providers, are accountable for quality **DeLaune & Ladner (2002)**. Quality patient care is provided through sustaining excellence in nursing services **(Robert, 2005)**. The preparation of practitioners who are client-oriented is one of the basic roles of education for satisfying clients' needs **(Schroeder, 2007)**.

Performance standards describe what should be done within reasonable condition to achieve the expected quality care **(Sale, 2000)**. Standards for acute and critical care nursing practice describe the practice of the nurse who cares for an acutely or critically ill patient **(Medina, 2005; Bell, 2005)**. These standards are important to reduce fragmentation and enhance a consistent focus of care, and to create clinical tools such as guidelines, care maps and clinical pathways. They also provide a foundation for evaluation of competencies and quality of care **(Canadian Association of Nephrology Nurses and Technologists, 2001)**.

An intensive care unit is a healthcare design for critically or seriously ill patients who are unable to communicate their needs or who require deliberate planned observation, and highly skilled nursing care. Due to the type of ICU patients and their critical conditions, there is a need for improving nurses' knowledge and practice to deal with patients' health problems **(Adam and Osborn, 2005)**. The delivery of critical care that is both appropriate and of the highest quality possible is a major concern of critical care nurses who provide or direct this care **(Abd El Fatah, 2002)**. Hence, critical care nurses must be lifelong learners because increasing information from multiple perspectives helps them when dealing with the continuous increasing in intensity, complexity of patient care in a period of rapidly developing technology **(Dan forth and Smith, 2001)**.

Critically ill patient in intensive care units often need different types of invasive procedures, whether diagnostic or therapeutic. The commonly used invasive procedures in these units include central venous catheter, peripheral intravenous (IV) cannula, urinary catheter insertion, nasogastric tube, and enema **(Duell and Martin, 2004)**. All invasive procedures are associated with increased risk for infection as any invasive device that enters the body provides a portal of entry for microorganisms, thus increasing the chance for infection **(Mehall et al., 2002)**. Thus, it has been reported that 50% of hospitalized patients inserting IV cannula get nosocomial infections. Also, 15-25% of all hospitalized patients with urinary catheter acquire urinary tract infections **(Black and Hawks, 2005; Bezzina, 2007)**.

Therefore, all invasive procedures must be performed with aseptic techniques **(Kilger et al., 2001)**. Moreover, nurses require knowledge and skills to practice such procedures safely in their areas and improve service delivery for the benefit of their patients **(Depledge and Gracie, 2006)**.

In Egypt, a national nursing standards guidelines booklet was developed by the Ministry of Health and Population **(MOHP, 1998)**, and distributed at various hospitals, including Zagazig University Hospitals. Nonetheless, the researchers noticed a high incidence of nosocomial infections and complications among ICU patients at Zagazig University Hospitals. Therefore, the current study was conducted to assess nurses' knowledge and practice related to invasive procedures in these settings.

Aim of the study:

The aim of this study is to assess nurses' knowledge and practice related to invasive procedures in intensive care units at Zagazig University Hospitals.

Research questions:

1- Do nurses have adequate knowledge about invasive procedures?

2- Do nurses follow the standard of nursing care while practice invasive procedures in intensive care units?

Subjects and Method:

Study design: A descriptive design was used in conducting this study.

Study setting: The study was carried out at the two intensive care units (Surgical and Emergency ICUs) at Zagazig University Hospital; their capacity was 15 and 14 bed respectively. The two units are satisfactory equipped, bbut some equipment needed during insertion of invasive procedures is not available.

Subjects: All nurses working in the two ICUs were recruited. Their total number was 85 nurses, 26 from the emergency ICU and 59 from the surgical ICU. The only inclusion criterion was a minimum of one year experience in ICU.

Tools for data collection: The data collection tools included a self-administered questionnaire and an observation checklist.

Self-administered questionnaire: The researcher developed this questionnaire to assess nurses' knowledge related to standards of nursing care about invasive procedures in intensive care unit. It was based on the Ministry of Health and Population **(MOHP, 1998)** booklet in addition to related literature **(Mallet and Dougherty, 2000; Dewit, 2001; Proehl, 2004; Perry and Potter, 2006)**. The first part of the questionnaire was concerned with nurse's personal (socio-demographic) characteristics as age, qualification, experience, attendance of training courses, and marital status. The second part of the questionnaire aimed to assess nurses

knowledge about invasive procedures: peripheral IV cannula (19 questions), female urinary catheter (17 questions), nasogastric tube (17 questions), and cleansing enema (16 questions). Questions were either true/false, or multiple choice.

Scoring: For each knowledge item, a correct response was scored 1 and the incorrect zero. The scores of the items of each area of knowledge were summed-up and the total divided by the number of the items, giving a mean score for the area. These scores were converted into a percent score, and means and standard deviations were computed. Knowledge was considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

- **Observation checklist**: This checklist was developed to assess nurse's practice of the four invasive procedures. It was guided by various pertinent sources **(MOHP, 1998; University of North Carolina Hospital, 2006; Wilkinson and Van Leuven, 2007)**. The checklist included four main parts for the four invasive procedures: peripheral IV cannula insertion (30 items), female urinary catheter insertion (53 items), nasogastric tube insertion (46 items), and administering cleansing enema (47 items).

  Scoring: The items observed to be done correctly were scored "1" and the items not done or incorrectly done were scored "0". For each area, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score, and means and standard deviations were computed. The practice was considered adequate if the percent score was 60% or more and inadequate if less than 60%.

Guidelines sheet: This guidelines was given for the nurses it contains of all information about four invasive procedures: peripheral IV cannula insertion, female urinary catheter insertion, nasogastric tube insertion, and administering cleansing enema according to standards. These standards describe the practice focus on; before Procedure, during procedure and after procedure.

Pilot study

A pilot study was carried out in order to test the feasibility of the study and the clarity and applicability of the tools. It was done on ten staff nurses. As no modification was done in the tools, the pilot sample was added to the total study sample. Face and content validity of the tools were ascertained by a panel of seven experts in Medical-Surgical Nursing

who revised the tools for clarity, relevance, applicability, comprehensiveness, and ease for implementation. According to their opinion, minor modifications were applied.

Fieldwork

The data collection procedure of this study was executed in six months, from March to August, 2007. Preparation was done by meeting with units' heads to clarify the objective of the study and the applied methodology. A nurses' time schedule and the nurses' assignment sheets were obtained in order to plan for data collection. Then, the researchers met with the study subjects, and explained to them the purpose of the study and their role in filling the questionnaire sheet. Distribution of the questionnaire sheet was done after the end of morning shift for nurses working at morning shift, and to nurses in the afternoon (evening shift) before starting their work. Observation was done intermittently, 4 hours/session, three sessions /week. According to patients' needs to studied invasive procedures, observation was done. Observation sessions were done in the three shifts. Each nurse was observed for all the studied invasive procedures.

Administrative and ethical considerations

An official permission for data collection in Zagazig University Hospitals was obtained from the hospital administration by submission of a formal letter from the Dean of the Faculty of Nursing. Meeting and discussion were held between the researchers and the nursing administrative personnel to make them aware about the aim of the research, as well as, to get better cooperation during the implementation phase. Also, each nurse gave her consent to participate before starting data collection. They were informed about the confidentiality of any obtained information, and about their right to refuse or withdraw at any time.

Statistical analysis

Data entry and statistical analysis were done using SPSS 15.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. Statistical significance was considered at p-value <0.05.

Results:

Table (1) describes the study subject's personal (socio-demographic) characteristics. Their age range between 17 and 33 years, with mean ±SD 22.9±3.7 years, and two-thirds are married. The majority of these nurses had diploma degree in nursing (89.4%). Their experience ranged between one and 14 years, with mean ±SD 4.2±3.3 years. Slightly less than two thirds of them (74.1%) had attended training courses.

Table (2) shows that most of the studied nurses (97.6%) had satisfactory knowledge regarding IV cannula and urinary catheter (96.5%). Conversely, less than two-thirds of them had satisfactory knowledge related to enema (61.2%). As for their practice of these invasive procedures, the table indicates much lower percentages of adequate practice. This was most evident for nasogastric tube (3.5%), and urinary catheter (18.8%).

The relation between nurses' knowledge about invasive procedures and their nursing qualification is presented in **Table (3**) The only statistically significant relation was with knowledge about enema ($p=0.025$). It is evident that more diploma nurses had satisfactory knowledge in this area, compared to bachelor degree nurses, 65.8% and 22.2%, respectively.

Table (4) points to one statistically significant relation between training programs attendance and nurses' knowledge about studied invasive procedures, which was with nasogastric tube ($p=0.048$). As the table illustrates, 73.0% of the nurses who attended training programs had satisfactory knowledge, compared to 50.0% of those who did not attend.

Concerning the relation between nurses' practice of invasive procedures and their nursing qualification, **Table (5**) demonstrates statistically significant relations with nasogastric ($p<0.001$) and enema ($p=0.033$) procedures. It is evident that bachelor degree nurses had higher percentages of adequate practice in both procedures, compared to diploma degree nurses.

Table (6) presents the relation between nurses' practice of invasive procedures and their attendance of training programs. Although the practice was generally higher in those who had attended training programs, none of the differences could reach statistical significance.

Discussion:

Many invasive procedures such as I.V. cannulation, urinary catheterization, nasogastric tube insertion, and enema are performed in intensive care units. Although great care is taken to control morbidity and prevent mortality, this invasive environment places intensive care unit patients and staff at a great risk of infection **(Grant, 2001)**. The need to provide quality care increased the demand for skilled nurses **(Danforth and Smith, 2001; Owens et al, 2001; Smith and Curran, 2003)**. Compliance with nursing care standard in performing invasive procedure is therefore crucial. Hence, it is important to evaluate nurses' knowledge and practice in this critical area at Mansoura University Hospital **(Abou Shady et al., 2001)**. The present study aim was to assess nurses' knowledge and practice related to standards of nursing for invasive procedures in intensive care units.

The study subjects consisted of 85 nurses working in the two intensive care units (surgery and emergency intensive care units) at Zagazig University Hospitals. The majority had diploma degree as in most similar settings in Egyptian University Hospitals **(Abou Shady, 2001; Attia, 2001; Abd-El Fatah 2002; Abd El-Lateef, 2003and Abd El-Khalik, 2006)**.

Four invasive procedures, namely IV cannula, urinary catheter, nasogastric tube, and enema were selected for assessment in the present study. This choice was based on the importance and frequency of use of these procedures. The present study results demonstrated very high level of knowledge regarding IV cannula, where almost all nurses had related satisfactory knowledge. The finding is in agreement with many previous studies that revealed that the majority of nurses had correct knowledge about IV cannula **(Silman, 2005; Dougherty and Lister, 2006; Bowden, 2007)**. This high level of knowledge could be attributed to the importance of IV cannulation procedure as an integral part of professional nursing care, and it is given to up to 50% of hospitalized patient **(Abd El-Khalik, 2006)**.

The present study nurses had also very high levels of knowledge regarding insertion of female urinary catheter, and most of them had satisfactory knowledge in this area. Similar findings were reported by **Proehl (2004)** and **Hussein (2005)** who found that most of the studied subjects gave complete correct answers about urinary catheter.

Concerning nurses' knowledge about the insertion of nasogastric tube, the present study indicated that slightly more than two thirds of

them had related satisfactory knowledge. This relative deficiency in knowledge could be explained by the fact that the use of nasogastric tube is less than IV cannula and urinary catheter. Therefore, nurses' knowledge about it would decrease by time. The rate of satisfactory knowledge was less than that reported by **Taha (2004)** and **Wilkinson and Van Leuven (2007)** who found that majority of nurses reported correct answers related to general knowledge about nasogastric tube.

The fourth procedure assessed in the present study was the administration of enema. The study findings revealed that nurses' satisfactory knowledge related to enema was the lowest of the four procedures. This finding could be attributed to the fact that this procedure is well-known and practiced in the community, and hence nurses might have given no importance to the scientific background related to its administration, and neglecting it as a procedure in orientation programs in ICU. The finding is in congruence with **Osman (2001)** who similarly demonstrated unsatisfactory levels of knowledge related to enema among studied nurses.

Assessment of the present study nurses' practices of the four invasive procedures under study revealed a major deficiency. This was particularly evident as regards nasogastric tube and urinary catheter insertion, which were observed to be adequately done by a minority of them. These findings are in agreement with **Silman (2005)** who reported that the performance of nurses related to urinary catheter in I C Us was poor. On the same line, **El-Kafafy (2001)** demonstrated a high rate of urinary tract infection due to poor compliance to aseptic technique during the insertion of the catheter. Similarly, **Gad Allah (2007)** found poor nurses' performance of urinary catheterization, especially in compliance to aseptic technique. Also, as regards enema, the present study is in congruence with **Amer (2001)** who found that nurses' related performance was substandard. On the contrary, **Taha (2004)** reported a high level of performance related to nasogastric tube insertion among studied nurses.

This poor practice of the present study nurses, compared to the high levels of satisfactory knowledge reflects the very well-known theory-practice gap. As **Williams and Wilkins (2002)** emphasized, nursing needs a theoretical base that shapes and reflects its practice. Hence, knowledge alone without practice has no effect on the quality of nursing care **(Sliman, 2005)**. Moreover, as indicated by **Hinchliff et al., (2003)**, all health care practitioners in contemporary practice are required to have both the knowledge and understanding of the professional framework for practice and must demonstrate this through their practice.

They are required to have good knowledge to safely provide patient care **(Smith and Curran, 2003)**.

The poor practice of studied invasive procedures demonstrated in the present study could be attributed to a number of reasons. Among these reasons is the lack of standardized nursing care procedures and unavailability of guideline manuals that describe all nursing procedures in intensive care units, which are of great importance as indicated by **O'Reilly (2003)** and **Berman et al. (2002)**. Another possible reason could be the lack of the facilities and equipment needed for compliance with nursing care standard in performing invasive procedures, e.g., sterile draping. This has been demonstrated by **Hussein (2005)** who reported that the inadequacy of supplies was an important reason for the observed inadequate nurses' performance in critical care units. Other possible reasons could be the shortage of nurses, which would lead to work overload by non-nursing activities added to their nursing tasks, lack of supervision, and absence of role model as clarified by **Cannaby et al. (2002)** and **Messmer et al. (2004)**.

The effect of nurses' qualification and attendance of training programs on their knowledge and practice of studied invasive procedures was also examined in the present study. It was found that bachelor degree nurses were better in certain areas of knowledge and practice. These present study findings are in line with **Attia (2001)** who similarly reported statistically significant relations between nurses' knowledge and their qualifications. The finding is however in contradiction with **Abd El-Aziz (2003)** who could not reveal any statistically significant association between nurses' level of knowledge and their nursing qualification.

The current study has also revealed that nurses who had attended previous training programs had statistically significantly better knowledge levels in some of the procedures. However, training programs had no significant effect on their performance. This could be explained by the more emphasis given to theoretical rather than practical issues in training programs. The study finding is in congruence with **Abdeen (2001)** who found that previously trained nurses had more satisfactory levels of knowledge.

Conclusion and Recommendations:

Based on the main study findings, it is concluded that nurses' knowledge about the four studied invasive procedures in ICUs was much better than their practice. Higher nursing qualification was associated

with better knowledge and practice, while attendance of previous training courses had a positive impact only on their knowledge.

Therefore, it is recommended that the nursing orientation and in-service training programs give more stress to practical training. Also, diploma nurses would need more training. The provision of procedures manual handbooks containing necessary information related to all nursing procedures rendered to patients in ICU could be of help. Continuous evaluation and monitoring of nurse's performance in ICUs should be done. Other reasons underlying the poor practice need to be investigated and corrected such as lack of standardized nursing care procedures and unavailability of guideline manuals that describe all nursing procedures in intensive care units, lack of the facilities and equipment needed for nursing care standard in performing invasive procedures.

Table (1): Personal (Socio-demographic) characteristics of the studied nurses (n=85)

Socio-demographic characteristics	No.	%
Age in years:		
< 20	18	21.2
20-	61	71.8
30+	6	7.1
Mean ±SD	22.9 ±3.7	
Range	17 - 33	
Marital status:		
Single	34	40.0
Married	51	60.0
Nursing qualification:		
Diploma in nursing	76	89.4
Bachelor degree in nursing	9	10.6
Experience (years):		
< 5	48	56.5
5-	32	37.6
10+	5	5.9
Mean ±SD	4.2 ±3.3	
Range	1 - 14	
Attended training courses:		
Yes	63	74.1
No	22	25.9

Table (2): Nurses knowledge and practice regarding the studied invasive procedures (n= 85)

Invasive procedures	Satisfactory knowledge (60%+)		Adequate practice (60%+)	
	No.	%	No.	%
I.V. Cannula	83	97.6	32	37.6
Urinary catheter	82	96.5	16	18.8
Nasogastric tube	57	67.1	3	3.5
Enema	52	61.2	36	42.4

Table (3): Relation between nurse's knowledge about invasive procedures and their qualification

Invasive procedures	Nursing qualification				Test	p-value
	Bachelor		Diploma			
	No.	%	No.	%		
Cannula:						
Satisfactory (60%+)	9	100.0	74	97.4		
Unsatisfactory (<60%)	0	0.0	2	2.6	Fisher	0.80
Urinary catheter:						
Satisfactory (60%+)	9	100.0	73	96.1		
Unsatisfactory (<60%)	0	0.0	3	3.9	Fisher	0.71
Nasogastric tube:						
Satisfactory (60%+)	4	44.4	53	69.7		
Unsatisfactory (<60%)	5	55.6	23	30.3	Fisher	0.15
Enema:						
Satisfactory (60%+)	2	22.2	50	65.8		
Unsatisfactory (<60%)	7	77.8	26	34.2	Fisher	0.025*

(*) Statistically significant at p<0.05

Table (4): Relation between nurse's knowledge of studied invasive procedures and their attendance of training programs

Invasive procedures	Attendance of training programs				X^2 test	p-value
	No		Yes			
	No.	%	No.	%		
Cannula:						
Satisfactory (60%+)	21	95.5	62	98.4		
Unsatisfactory (<60%)	1	4.5	1	1.6	Fisher	0.45
Urinary catheter:						
Satisfactory (60%+)	20	90.9	62	98.4		
Unsatisfactory (<60%)	2	9.1	1	1.6	Fisher	0.16
Nasogastric tube:						
Satisfactory (60%+)	11	50.0	46	73.0		
Unsatisfactory (<60%)	11	50.0	17	27.0	3.91	0.048*
Enema:						
Satisfactory (60%+)	12	54.5	40	63.5		
Unsatisfactory (<60%)	10	45.5	23	36.5	0.55	0.46

(*) Statistically significant at p<0.05

Table (5): Relation between the observed nurses' practice of the studied invasive procedures and their qualifications

Invasive procedures	Nursing qualification				X^2 test	p-value
	Bachelor		Diploma			
	No.	%	No.	%		
Cannula						
Adequate (60%+)	4	44.4	28	36.8		
Inadequate (<60%)	5	55.6	48	63.2	Fisher	0.72
Urinary catheter						
Adequate (60%+)	3	33.3	13	17.1		
Inadequate (<60%)	6	66.7	63	82.9	Fisher	0.36
Nasogastric tube						
Adequate (60%+)	3	33.3	0	0.0		
Inadequate (<60%)	6	66.7	76	100.0	Fisher	<0.001*
Enema						
Adequate (60%+)	7	77.8	29	38.2		
Inadequate (<60%)	2	22.2	47	61.8	Fisher	0.033*

(*) Statistically significant at p<0.05

Table (6): Relation between observed nurses' practice of the studied invasive procedures and their attendance of training programs

Invasive procedures	Attendance of training programs				X^2 test	p-value
	No		Yes			
	No.	%	No.	%		
Cannula						
Adequate (60%+)	6	27.3	26	41.3		
Inadequate (<60%)	16	72.7	37	58.7	1.36	0.24
Urinary catheter						
Adequate (60%+)	4	18.2	12	19.0		
Inadequate (<60%)	18	81.8	51	81.0	Fisher	1.00
Nasogastric tube						
Adequate (60%+)	3	13.6	10	15.9		
Inadequate (<60%)	19	86.4	53	84.1	Fisher	1.00
Enema						
Adequate (60%+)	7	31.8	29	46.0		
Inadequate (<60%)	15	68.2	34	54.0	1.35	0.25

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أداء الممرضات بالنسبة للإجراءات النافذة في وحدات الرعاية المركزة بمستشفى الزقازيق الجامعي

مقدمة

إن جودة الخدمات الصحية المقدمة للمريض صارت الآن الشاغل الأكبر للعاملين في مجـال الرعاية الصحية، والممرضة كعضو هام في الفريق الصحي هي أيضا مسئولة عن الجـودة. ومعايير الرعاية التمريضية تشمل المعارف والمهارات المطلوبة من الممرضات مـن اجـل تقديم الرعاية بكفاءة وفاعلية لتحسين رعاية المريض وتقليـل تكلفـة الخدمـة ومـضاعفاتها المحتملة على المريض. وأهمية الجودة تزداد في الأماكن التي تقدم الرعاية للحالات الحرجـة مثل وحدات الرعاية المركزة، وأيضا في إجراءات الرعاية التمريضية النافذة التـي تختـرق جسم المريض مثل تركيب الكانيولا الوريدية الطرفية، القسطرة البولية، الأنبوب الأنف معدية، والحقنة الشرجية المنظفة

هدف الدراسة

تهدف هذه الدراسة إلى تقييم معلومات ومهارات الممرضـات المتعلقـة بمعـايير الرعايـة التمريضية الخاصة بالإجراءات النافذة التي تخترق جسم المريض بوحدات الرعاية المركـزة بمستشفى الزقازيق الجامعي.

أسئلة البحث

هل الممرضات لديهن ما يكفى من المعلومات عن الاجراءات النافذة؟

هل الممرضات يتبعن معايير الرعاية التمريضية أثناء أدائهن الاجراءات النافذة؟

طرق وأدوات البحث:

التصميم البحثي: تم إجراء الدراسة باستخدام التصميم الوصفي

مكان البحث: أجريت هذه الدراسة في وحدات الرعايـة المركـزة بمستـشفى الزقازيق الجامعي.

عينة البحث: اشتملت عينة الدراسة على ٨٥ ممرضة يعملن بوحدتي الرعايـة المركزة (٥٩ في الجراحة و٢٦ في الحوادث)، وكـان معيـار الاختيار هو أن يكون لها على الأقل سنة خبرة في مكان العمل.

أدوات البحث: اشتملت أدوات البحث على أداتـين تـم تـصميمهما بواسـطة الباحثة استنادا إلى المراجع العلمية ومراجـع وزارة الـصحة والسكان، وهي:

- استمارة استبيان لتقييم معلومات الممرضات عن أربعة مـن الاجـراءات النافذة التي تخترق جسم المريض هي تركيب الكانيولا الوريدية الطرفيـة، القسطرة البولية، الأنبوب الأنف معدية، والحقنة الشرجية المنظفة.

- قائمة ملاحظة لتقييم مهارات الممرضات في أداء هذه الإجراءات.
- استمارة ارشادات وتوجيهات حسب معايير الرعايه التمريضية تحتوى على جميع المعلومات الخاصة بالاجراءات الاربعة النافذة (تركيب الكانيولا الوريدية الطرفية، القسطرة البولية، الأنبوب الأنف معدية، والحقنة الشرجية المنظفة) معتمدة على معايير الرعاية القبل,أثناء وبعد الاداء.

اختبار الثبات والمصداقية.

الدراسة الاستطلاعية: تم عمل دراسة استطلاعية على عشر ممرضات وتم تعديل الأدوات بناء على نتائجها.

جمع البيانات: استغرقت عملية جمع البيانات والمعلومات ستة اشهر ابتداء من مارس الى أغسطس ٢٠٠٦.

النتائج: أسفرت الدراسة عن النتائج التالية:

- تراوحت أعمار الممرضات بين ١٧ و٣٣ سنة، ومعظمهن حاصلات على دبلوم تمريض، وسنوات الخبرة لديهن أقل من خمس سنوات.
- تبين أن الغالبية العظمى من الممرضات كان لديهن معلومات مرضية عن تركيب الكانيولا الوريدية الطرفية والقسطرة البولية، بينما كانت المعلومات أقل فيما يتعلق بالأنبوب الأنف معدي (٣,٥%) والقسطرة البولية (١٨,٨%).
- أظهرت نتائج الدراسة أن معلومات الممرضات الحاصلات على دبلوم فى التمريض عن الحقنة الشرجية كانت أعلى مقارنة بالحاصلات على البكالوريوس، وكان الفارق ذا دلالة احصائية.
- أيضا كانت معلومات الممرضات اللواتي حصلن على برنامج تدريبي كانت أعلى فيما يتعلق بالأنبوب الأنفى المعدي مقارنة بغير الحاصلات على تدريب، وكان الفارق ذا دلالة احصائية.
- كذلك أظهرت نتائج الدراسة أن أداء الممرضات الحاصلات على دبلوم فى التمريض عن الإجراءات الخاصة بالأنبوب الأنفى المعدي والحقنة الشرجية كانت أقل مقارنة بالحاصلات على البكالوريوس، وكان الفارق ذا دلالة احصائية.

الخلاصة والتوصيات:

أظهرت الدراسة أن معلومات الممرضات عن الإجراءات النافذة التي تختـرق جـسم المريض والتي تم تقييمها أفضل من أدائهن لهـا، وكانـت المعلومـات والأداء أقـل لـدى الممرضات الحاصلات على دبلوم فى التمريض مقارنة بالحاصلات على البكالوريوس، وكان حضورالممرضات للبرامج التدريبية ذو أثر إيجابي كبيرعلى معلوماتهن.

وبناء على هذه النتائج يوصى بوضع خطة للتعليم المستمر الفعال للممرضات فـي وحدات الرعاية المركزة، وتوفير كتيبات إجرائية تحتوي على المعلومات الـضرورية لكـل الإجراءات التمريضية لمرضى الرعاية المركزة باللغة العربية، مع وضـع نظـام متكامـل للإشراف في وحدات الرعاية المركزة لتقديم الدعم والإرشاد للممرضات أثناء عملهـن، كمـا يجب تقويم أداء الممرضات بصفة دورية ومستمرة لتحسين جودة أدائهـن. ويقتـرح عمـل دراسات مستقبلا للتعرف على العوامل المؤثرة في جودة أداء الممرضات في وحدات الرعاية المركزة.

Capacity Building of Clinical Trainers: The challenge

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Abstract
Background: The endless criticism of mal- practice of graduates of the Baccalaureate degree nurses, and the dissatisfaction of the graduates themselves, in addition to the chronic complaints of stakeholders and students from their clinical evaluation grades, paved the way to think about the problem. Factors that lead to the project are: A. Lack of permanent professors in the participating schools, B. Complaints of the newly appointed clinical instructors from lack of formal and informal preparation for carrying out the role of clinical assessment. In addition, of the clinical instructors reports of lack of objective assessment checklist. **The objectives** of the study were: Capacity building (CB) of clinical instructors and assistant lecturers to develop a Learning Guide and Standardize Clinical Assessment checklist and use it for assessing student nurses' clinical performance. **The study utilized a** quasi experimental design using pre-post and retention – test after one year from the Capacity Building Intervention. **Subjects:** were 100 CI working at three Community universities in Egypt. The study was carried out at the three faculties of Nursing. **Method:** Tools for data collection included: A questionnaire that was used for pre, post and retention test (after one year) to illicit personal profile of subjects, knowledge about: clinical assessment, developing learning guide and assessment checklist, and attitude towards clinical assessment. B. An observation checklist, to assess participants' performance while assessing students in clinical environment before and after the CBI, a third observation was done after one year. **Results**: results showed that the intervention was successful in increasing the knowledge, improving the attitude and improving the practice while evaluating student nurses. The project was effective in developing a clear, comprehensive, applicable, and objective assessment tool and capacity building of participants.

Key wards: Capacity Building**,** Clinical Trainers, Learning Guide, Clinical Assessment Checklist.

Introduction

Capacity building and development is an organized, goal-directed process to achieve career progression and growth. It is plan pursued over the entire span of professional career that should be consciously integrated into daily activities **(Bateman et al., 2008**). Capacity building of faculty requires clear vision/mission - for professional plan, self-motivation, self confidence, job support, a good mentor, a plan to attaining professional goals that needs development, and continual re-assessment and development **(Hussein, 2005).**

The learning-teaching process is an ongoing, dynamic, interpersonal process whereby both the learner and the teacher grow. Teaching is the facilitation of learning based upon various principles of education as well as the theories in human development and learning. Through the learning-teaching process, the clinical instructor facilitates students' performance (**Bulman & Schutz, 2004)**.

Clinical teaching is often a high-pressure activity. Clinical instructor (CI) is a mentor for students to help them diagnose the patient. CI role includes effectively diagnose how the student is framing the problem and appropriately address that problem or question at hand. Studies show that mentorship improves self-confidence, influences goal setting, improves coping skills and enhances goal attainment **(Cole, 2008)**.

Skill acquisition is a major element of the Mastery Learning Model. The process of mastery learning starts by knowledge acquisition in class room settings using different teaching strategies, then, skill acquisition in skill labs, to reach competency development through coaching, mentoring and performance support **(Health Workforce Development, 2006).**

Competency is inherent to the practice of nursing. It is defined as the ability to plan and carry out knowledgeable, efficient and safe nursing care and assumes an awareness of one's own limitations Clinical instructors are required to master the core competencies that include: 1) achieving a well accepted knowledge base, 2) practicing safe and efficient nursing care, and 3) be able to help students demonstrating basic nursing skills **(Downing & Haladyna, 2004).**

The goal of clinical assessment in nursing education remains the development of reliable measurements of student performance which, have predictive value for subsequent clinical competence, providing feedback to students regarding their clinical performance, using a standardized clinical assessment checklist to assess clinical performance, (**Hussein, 2005)**.

A learning guide is an evidence –based, competency –base learning tool that contains a step- by- step approach to perform a clinical procedure. It is used by CI as a teaching aid. A learning guide is valuable because it help student to understand the specific sequence of the steps in the procedure; and skill acquisition, in addition it facilitates peer assessment and ensures standardized performance of the clinical procedure **(Hussein, 2005).** The steps for developing a learning guide are: Selection of a clinical procedure to be taught; break the procedure down into major tasks to be accomplished before, during and after the

procedure; break down each major task into individual steps that cannot be further broken down; arrange steps in logical sequence; identify steps that can be simultaneously, use national and international standards to ensure that all the steps are technically correct **(Health Workforce Development 2006).**

Clinical assessment checklist is an objective assessment tool used to evaluate students' competency in performing a clinical procedure. It is derived from the corresponding learning guide. And it lists the essential tasks in performing a clinical procedure after removing all the detailed description that is included in the learning guide. It is a valuable objective tool used for correction and feed back assessment of student performance, also, it has high level of inter- rater (examiners) reliability. The student evaluation tool should not serve as the sole entity for making judgments about the quality of the clinical learning experience. This tool should be considered as part of a systematic collection of data that might include reflective student journals, self-assessments provided by clinical education sites **(Health Workforce Development 2006 & Hussein et al., 2008).**

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Need for the study

There were constant complaints of newly appointed clinical instructors from lack of formal and informal preparation for carrying out the role of clinical assessment. In addition to lack of clear, applicable, objective, and comprehensive clinical assessment checklist to use while assessing students in clinical setting.

A pilot study was conducted in the year 2004 for Master students (n=25) and Doctorate Degree students (n=12) who were attending courses of Methods of Research in Nursing, Critical Analysis of Research, Primary Health Care and Community Health Nursing, at Faculty of Nursing, Menoufiya University. The researcher asked the participants 5 questions regarding: Role of clinical teacher, objectives of clinical teaching, attitude toward clinical assessment, methods of clinical assessment; degree of satisfaction with clinical assessment. The results of the questionnaire was alarming since the majority of participants failed to answer all the questions. In addition, they expressed a need for development courses and a valid, reliable and objective assessment tool.

The objectives of the study:

Capacity building (CB) of clinical instructors and assistant lecturers to develop a Learning Guide and Standardize Clinical

Assessment Checklist and use it for assessing student nurses' clinical performance.

Subjects and Method:

Research design

A quasi experimental design using pre-post and retention- test, after one year from the Capacity Building Intervention (CBI) was used.

Subjects and method:

The original subjects who participate in the project were 23 clinical instructor, 33 assistant lecturers and 4 lecturers working at three universities in Egypt namely Tanta, Zagazig and Menoufiya University). However, for maximization of the benefits of the project the three faculties of nursing nominated 40 clinical instructors to participate in the project. So, the total number of subjects became 100. The lecturers participated in the study were recruited to be coaching the participants for training and activities.

Setting:

The study was carried out at each of the participating universities Tanta, Zagazig and Menoufiya University.

Tools for data collection:

A. A questionnaire that was developed by the researchers and measured for content validity - by a group of three professionals in the field of nursing education- was used for pre, post and retention test (after one year) to illicit personal profile of subjects, knowledge about: clinical assessment, developing a learning guide, developing an assessment checklist and participants' attitude towards clinical assessment.

B. An observation checklist, that was developed by the researchers and measured for content validity - by a group of three professionals in the field of nursing education- to assess CI performance while assessing students in clinical environment before and after the CBI and a third observation was done after one year. The observation checklist contains dichotomous responses (yes, No) statements regarding CI's: communication skill with student (4 statements), using checklist for assessment (one statement), guidance (6 statements), and giving feedback (5 statements) giving professional direction to students (3 statements). Each statement was given a score from zero (negative response) and one to the positive response. A mean score for participants were computed and a mean score for each university was computed.

The global score ranged from zero to 18, a cut off point equal or less than 12 was considered as **serious deficits** in participant attitude, and a score of 16 is considered as **accepted level of performance**, while more than 16 is considered **superior** (exceed expectations). This score

was adopted from **Bateman et al. (2008)** and measured for inter- rater reliability, consistency and content validity by the same group of professionals.

The success rate: of the project in developing participants' knowledge, attitude and skills towards clinical assessment measured by the following equations:

$$\frac{\text{Knowledge percentage post -intervention - knowledge percentage pre intervention}}{\text{Total no. of studied participants}} \times 100$$

$$\frac{\text{Attitude percentage post-intervention - Attitude percentage pre intervention}}{\text{Total no. of studied participants}} \times 100$$

$$\frac{\text{Practice percentage post-intervention - Practice percentage pre intervention}}{\text{Total no. of studied participants}} \times 100$$

Implementation process

Integrate the **Health Workforce Development (2006)** for developing a Learning Guide (LG) and Assessment Checklist (AC) using the same strategy to develop the learning guide and assessment checklist for Adult Health Nursing I, II.

The **Health Workforce Development, (2006)**, developed before (LG) and (AC) for areas of Pediatrics, Obstetric /Gynecology and Community Health Nursing Department. Implementation process includes the following steps:

1. Review international best practices models and introducer Mastery Learning Model and Performance - Oriented teaching strategy (lecture, group discussion, demonstration/ re-demonstration, and simulation), while training clinical instructors and assistant lectures at the clinical laboratories of nursing faculties that involved in the project.
2. Train the four lecturers to coach the CI activities, and work in the project as training team.
3. Develop the CBI of faculty' skills in clinical evaluation through-implementation of 4 training sessions and 4 workshops. For time constrains the educational materials were emailed to participants who were not able to attend the training sessions.
4. Train assistant lecturers and clinical instructors on methods to develop a learning guide and a checklist. Participants who failed to develop a correct clinical assessment checklist were coached till they fully understand the method.
5. Use the developed checklists while assessing students in the lab, to assess its clarity, applicability, objectivity, comprehension while assessing student nurses' clinical performance.

6. Measure the validity and reliability of the developed learning guide and checklist by a group of three professionals in nursing education.
7. Evaluate the success rate of the CBI by measuring the difference between post intervention percentage for knowledge, attitude and skills and pre intervention percentage divided by total no. of studied participants (100), all multiply by 100.

Results:

Table (1) presents the personal/ professional characteristics of participants in the project. It revealed that the mean age of participants was 24.5 ± 6.65. 57.1% were clinical instructors holding Bachelor degree, 28.6% were from Adult Health Nursing I, II. The mean years of experience was 5.79 ± 1.8.

Like wise, **figure (1**) Revealed that only 3 % of clinical instructors and 18 % of assistant lecturers had knowledge about developing a learning guide compared to 77% and 92% for clinical instructors and assistant lecturers at the post- test.

Like wise **figure (2**) presents that, the knowledge of clinical instructors and assistant lecturers regarding developing assessment checklist had improved significantly after implementation of the educational intervention. Since only 2% of CI and 6 % of Ass. Lecturers reported knowing how to develop an assessment checklist at the pre –test compared to 65 %, 71% of CI and 75%, 77% % for ass. Lecturers at the post- test and retention –test successively.

In **figure (3**) the results of observing participants' while assessing students in clinical environment shows that the pre –test total score for clinical instructors and assistant lecturers were very low (12% and 10% respectively).However, it is significantly improved at the post-test(64%,72%) and retention test (92% 98% and).

In **figure (4**) it is clear that the majority of clinical instructors (96%) and assistant lecturer (92%) reported that the developed assessment checklist was clear (98%) applicable (89%), comprehensive (79%) and objective (99%).

Like wise, **figure (5**) presented that the majority of participants reported high success rate of the project to improve their knowledge, attitude (98%, 91%and 89%) respectively, for CI and (82%, 96%and 76%)respectively, for assistant lecturers towards clinical assessment and developed their clinical evaluation skills.

Discussion:

The aim of the study was capacity building (CB) of clinical instructors and assistant lecturers to develop a learning guide for clinical

teaching and drive an assessment checklist to be used for assessing student nurses' clinical performance. The tool allows students to objectively comment on the quality and richness of the learning experience and to provide information that would be helpful to other students, adequacy of their preparation for the specific learning experience **(Alkin, 2004)**.

The majority of participants in the present study were clinical instructors who are: young (mean age was $\pm 24.5 \pm 6.65$) newly appointed (mean years of experience were ($\pm 5.79 \pm 1.8$) and most of them did not attend formal preparation to carry out their role as clinical teachers and/ or assessors**.** These findings are attributed to the fact that this problem faces the community universities where they have shortage of permanent academic professors and use part time professors from well established universities who lack the time for training CI. So the clinical teaching and assessment is left to the young untrained instructors. **Hussein et al. (2008**) supported these findings. While observing the participants skills in evaluating the students – before and after the intervention- the mean scores were very low before the intervention in all the concepts that reflect lack of understanding to the meaning of assessment and lack in their preparation Like wise, the CBI was effective in improving their mean scores at all the concepts which is supported also by Cross 2008 who reported that attendance of developmental courses and having a development plan will lead in promoting the professional growth and continuous quality improvement of faculty and nursing education leaders who prepare the global nursing workforce.

Val Wass et al. (2001) reported that clinical assessment is a high pressure activity. This is in congruent with the results of the observation scores of CI and Ass. Lecturers while assessing students' clinical performance, where almost all participants were having high pressure and negative attitude towards student assessment and their scores have shown serious deficit. This could be due to their lack of confidence, low self esteem from lack of preparation to carry their role, and dissatisfaction with the tool.**Gignac-Caille & Oermann (2001)** reported a need for preparation of assessors to be confident in carrying their job. And more sophisticated valid and reliable methods are needed to assess clinical performance, including direct observation, objective structured clinical assessment tool **(Downing & Haladyna, 2004).**

The findings of the present study also, revealed that there was positive correlation between years of experience, attendance of continuous training courses and the change in knowledge, attitude and

practices. Their was significant improvement in participants knowledge - at the post test and retention test - of method of preparing a learning guide for a clinical teaching session and deriving basic skills from the learning guide to be used for developing an assessment checklist. **Hussein et al. (2008) & Cross et al.,(2006)** supported these findings and ascertain that, the educational intervention was very effective in improving participants knowledge, attitude and performance in clinical assessment.

Val Wass et al. (2001) Belinisky, Tataronis and **Gary (2007)** illustrated that; faculty needs to attend educational sessions that develop their teaching and evaluation skills and in turn improve their attitude. This is in agreement with the findings of the present study where participants' attitude towards clinical assessment has improved since the majority has reported high level of positive attitude towards student assessment after attending training sessions and developed the learning guide and checklist during the workshops on clinical evaluation. Like wise, **Jamalalla, (2005**) added that, education intervention must recognize that gaining knowledge is important but is not the only consideration to be made to increasing the self-esteem and self confidence.

The CI degree of satisfaction with the developed tool was impressive since almost all of the participants reported that the developed assessment checklist was clear, applicable, comprehensive, and objective. The purpose of developing this tool was in response to academic and clinical educators' requests to provide a consistent and uniform approach for CI to evaluate student clinical performance as well as the overall clinical experience. The development of this tool was based on key assumptions for the purpose, need for, and intent of this tool. The tool is intended to provide the student's assessment of the quality of the clinical learning experience and the quality of clinical instruction for the specific learning experience.

Likewise, **Kogan, Shea** and **Bellini (2003)** and **Goldstein , Maclaren** and **Smith (2005)** reported that, developing a valid and reliable clinical assessment tool that could be used for student assessment targets those needs. Continuous feedback and program improvements insure that institutional investments of time and emotional energy are optimized, while keeping costs manageable.

Conclusion:

The CBI was very effective in empowering participants and changing their knowledge, attitude and performance in clinical assessment. In-

addition during the CBI, participants developed a Learning Guide for clinical teaching and derived checklists for all the clinical procedures for Adult Health Nursing I, II.

Recommendations:

- Activate the utilization of the Learning Guide booklet that was developed to be used as part of the clinical teaching curriculum.
- Use the Standardized Clinical Assessment checklist developed through the project for areas of Adult Health Nursing I,II.
- On job training for clinical instructors and continuous training for faculty and assistant faculty to upgrade their knowledge in the field of education.

Acknowledgement: *to professor/ Sanaa Nour (Quality assurance of the project) and Professor /Salwa Abbas Ali (Coordinator of the project)– Faculty of Nursing-Zagazig University) for their support and cooperation while conducting the project.*

Table (1): Personal Characteristics of the Studied Sample

Variables		NO = 100	%
Age			
< 25		62	62.0
25-30		30	30.0
30-40		5	5.0
40+year		3	3.0
Mean ± SD		24.5 ± 6.65	
Working category			
Clinical instructor		63	63.0
Assistant lecture		33	33.0
Lecturer		4	4.0
Qualification			
Baccalaurean		63	63.0
Master		33	33.0
Doctoral		4	4.0
According to specialty			
Adult Nursing I,II		29	29.0
Pediatric		19	19
Obstetrics		26	26.0
Community		26	26.0
Years of experience			
<5 years		52	52.0
5-10 years		38	38.0
10-15 years		5	5.0
15+ years		5	5.0
Mean ± SD		5.79 ± 1.8	

Figure (1): Percent distribution of participants' knowledge of developing a learning guide

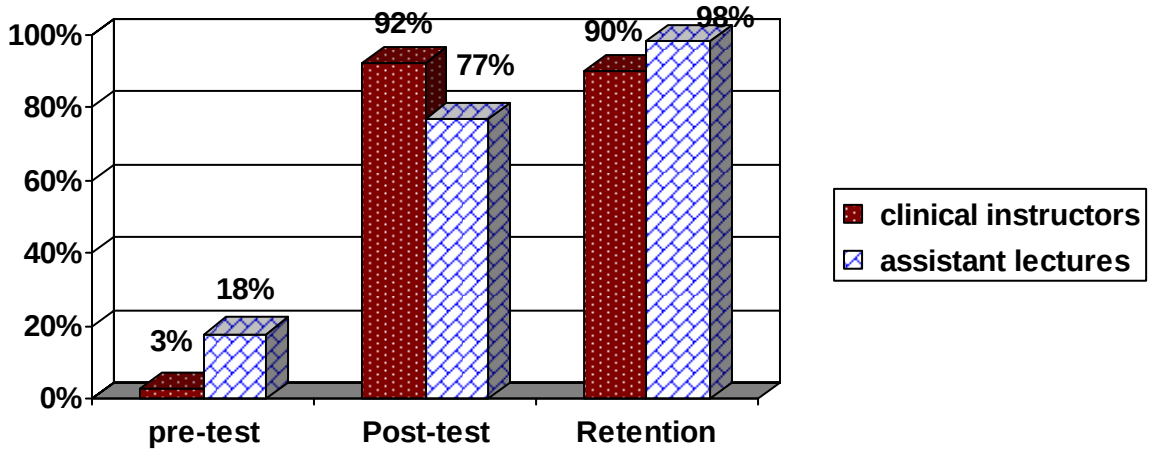


Figure (2): percent distribution of participants' knowledge about developing an assessment checklist at the pre- post test and retention

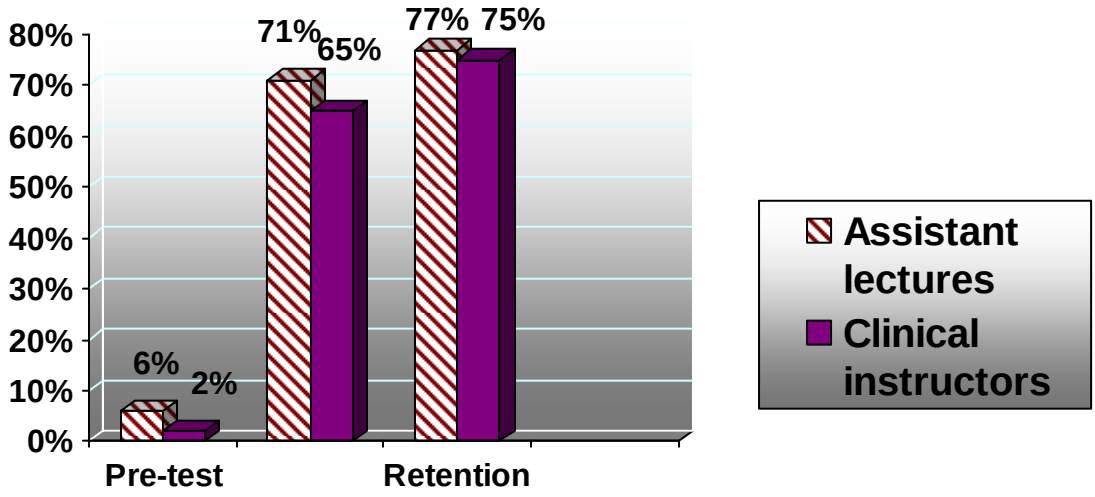


Figure (3): Observation of participants' performance scores while assessing Students

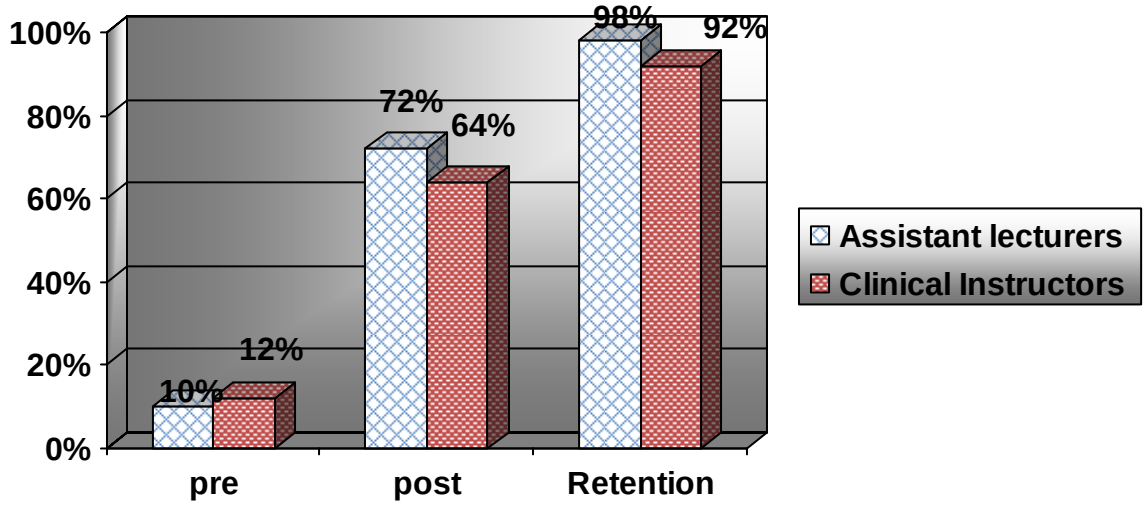


Figure (4): Distribution of participants' opinion about the developed assessment checklist regarding to clarity, applicability, comprehension and objectivity.

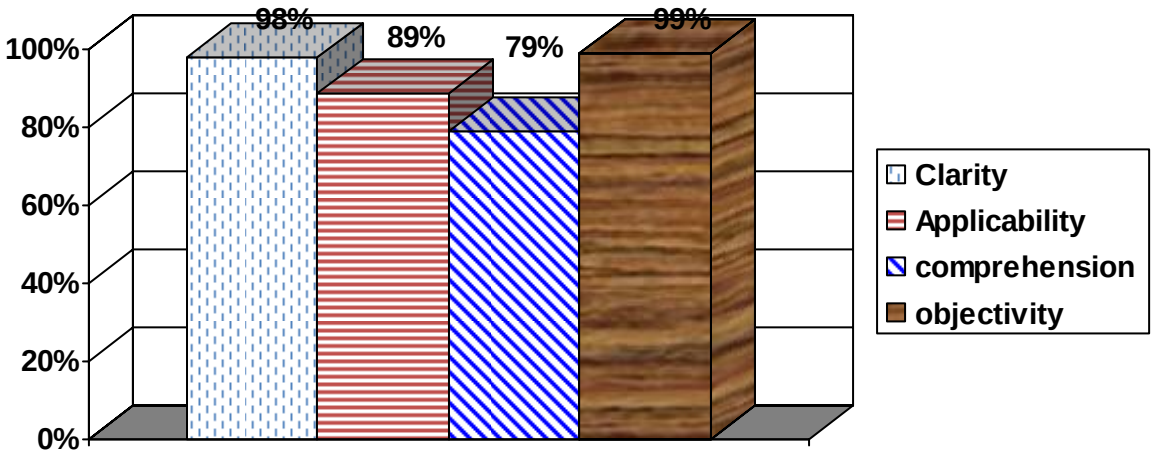
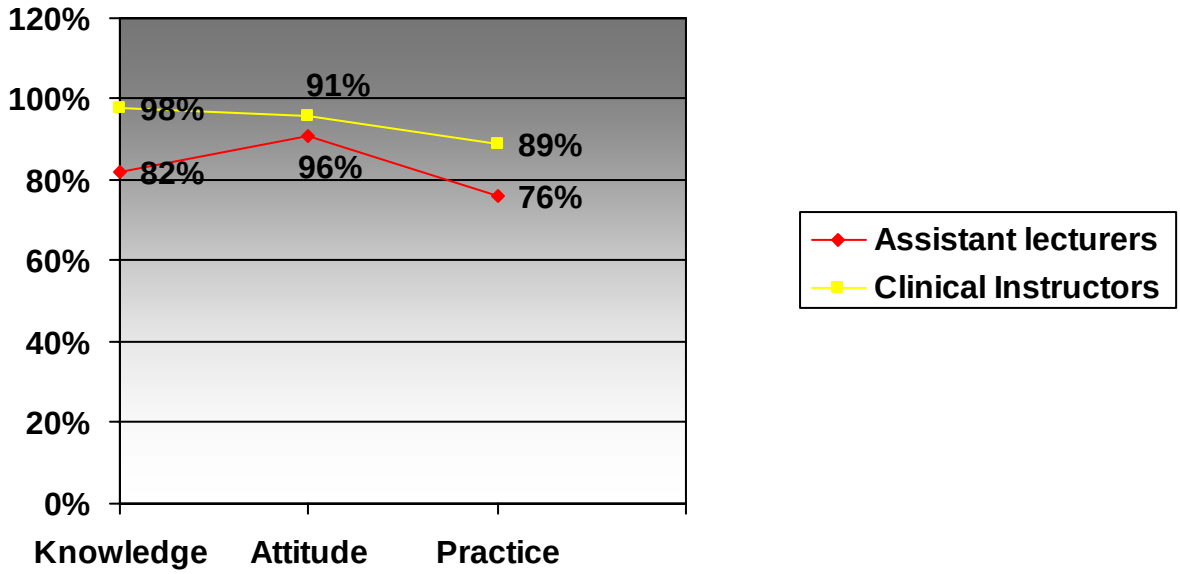


Figure (5): Reported success rate of the project in developing participants' knowledge, attitude and skills towards clinical assessment



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بناء قدرات مدربات العملى

مقدمه:

يتم اختيار المعيدات بناءا على تفوقهم العملى وليس على قدرتهم على التدريس او التقييم , ونظرا لحاجة العمل اليهم فانه يوكل اليهم القيام بالتدريس و التقييم العملى بمجرد تعيينهم ولا يتم عمل دورات تدريبية للقيام بهذا العمل الهام.

بناء على النقد المستمر لاداء خريجات كليات التمريض وعدم رضاء الخريجات عن ادائهم العملى, وكذلك شكوى الطالبات من عدم رضائهم عن تقييمهم العملى كان لابد من اجراء بحث ميدانى تجريبى على عدد من طالبات الماجستير وكذلك طالبات الفرقة الرابعة لمعرفة رايهم فى التقييم العملى. وقد جاءت نتائج هذا البحث لتؤكد على ضرورة الحاجة لمشرع لتنمية قدرات الهيئة المعاونة فى التقييم العملى.

الهدف من البحث :

هذا البحث يعتبر جزء من مشروع ممول من مشروع تطوير التعليم العالى (HEEF) والذى استمر لمدة عامين من ٢٠٠٥-٢٠٠٧م. ويهدف هذا الجزء من المشروع الى بناء قدرات مدربات العملى (معيدات- مدرسين مساعدين) على تصميم مرشد تعليمى للعمليات السريرية التمريضية ثم استخراج استمارة تقييم لاداء الطالبات العملى.

طرق البحث:

تم استخدام أسلوب شبه تجريبى بالاستعانة بالاختبار القبلى لتحديد المستوى ثم تصميم تدخل تعليمى بناءا على الاحتياجات- ثم اختبار بعدى واختبار اخر بعد عام دراسى كامل.

تم ترشيح عدد ١٠٠ معيدة و مدرس مساعد من ثلاث جامعات اقليمية هى كليات التمريض جامعة المنوفية/ طنطا/ الزقازيق . تم الاستعانة بعدد ٤ مدرسات للعمل كمرشد اثناء التدخل التعليمى.

ادوات البحث:

١- تم تصميم استمارة للتعرف على الخصائص الشخصية ,المعلومات عن كيفية تصميم استمارة تقييم . الى جانب اتجاه المشاركة ناحية التقييم العملى ورضائها عن ادائها للتقييم العملى للطالبة.

٢- تم تصميم استمارة و ملاحظة لتقييم اداء المشاركات اثناء تقييمهم العملى للطالبات و تـم استخدامها قبل وبعد التدخل التعليمى وبعد عام من التدخل.

٣- التدخل التعليمى: بناءا على نتائج الاختبار القبلى تم تصميم عدد ٤ دورات تدريبية علـى طريقة التقييم العملى. وكذلك تم تنفيذ عدد ٤ ورش عمل لتدريب المشاركات علـى تـصميم مرشد تعليمى واستخلاص استمارة تقييم منه باستخدام الاستراتيجية التى تم وضعها من قبـل مشروع تنمية قدرات طاقم العمل بالفريق الصحى (HWD) .

نتائج البحث:

أسفرت نتائج البحث عن تحسين احصائى فى معلومات المشاركات وكذلك اتجاههم نحو التقييم بالاضافة الى تحسين احصائى ملحوظ فى ادائهم لتقييم الطالبات. كما ابرزت النتـائج نجـاح المشروع بنسب عالية للمشاركات فى البحث.

مخرجات البحث:

تم تصميم كتيب مرشد تعليمى للمقرر العملى لمادة التمريض الباطنى والجراحى ٢،١ ثم عمل استمارات تقييم لجميع العمليات التمريضية السريرية لمادة التمريض الباطنى والجراحى ٢،١ تم قياسها من حيث الثبات و المصداقية.

التوصيات:

- متابعة المدربات حديثي التخرج والتعيين وعمل دورات تدريبية لهم قبل اقحامهم فـى التعيين العملى للطالبات.
- تقييم أداء المدربات دوريا فى نهاية كل فصل دراسي وتقديم تقرير للعميدة بذلك .
- التأكيد على استخدام مخرجات المشروع .

Effectiveness of Rehabilitative Nursing Intervention on Patients with Chronic Low Back Pain

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Abstract

Background: Chronic low back pain is a common health problem in many countries. Individuals suffering from chronic low back pain experience major physical, social, mental, and occupational disruptions. The impact of low back pain includes loss of physical function; deterioration of general health and reconditioning (loss of muscle tone and weight gain); constant or episodic pain or increase in the level of pain; loss of social functioning manifested as decreased participation in social and leisure activities, family stress, or loss of group and community relatedness (often associated with decreased income and/or job loss); and disruption of psychological functioning manifested through insomnia, irritability, anxiety, depression and somatic complaints. Whilst there have been a number of studies investigating the current physiotherapy management of LBP in the former, little is known about such management in developing countries. **Aim of the work** was twofold: first, to examine the effectiveness of a Rehabilitative Nursing Intervention on patients with Chronic Low Back pain immediately after the intervention and 3months later. Second, to assess the effect of these interventions on patient's quality of life and patient's satisfaction .**Subject and methods**: A Quasi experimental research design was used with three-month follow-up. **Setting**: The study was implemented in the out patient department of physical medicine clinics in Menoufiya University Hospital. 70 patients, diagnosed with chronic low back pain were included and divided into two matched groups. **Group I** (31 Patients) received Medical Intervention (MI) and strengthening exercise for back and abdomen besides interferential current stimulation for a period of three months. **Group II** (n=39) received (MI) and a Self Back Education Package (SBEP) regarding body mechanics. .Both groups received an initial physician evaluation and subsequent management protocol as prescribed**. Results**: There was improvement of mean QOL score in almost all domains for the two groups at the post intervention. Also, there was no statistical significant association between disability level and total score of QOL in each of the studied groups Rating Quality improvement was 60.7 % for group I intervention and was 60.0 % for group II intervention. **Conclusion:** Overall, both nursing modalities that were used in the present study were effective to reduce the disability, pain. Also, all quality of life domains of patients with chronic low back pain were improved except with emotional role in group managed by strengthening exercises (for back and abdomen) and Interferential Current Stimulation and except with physical functioning in group managed by Self Back Education Package (SBEP) .In addition, the two modalities have the same effect on patient's satisfaction.

Key words*:* Chronic low back pain, Quality of life, Disability, strengthening exercises, Body mechanics, Back care.

Introduction

Low back pain (LBP) is one of the most common musculoskeletal disorders in both developed and developing countries. Whilst, there have been a number of studies investigating the current physiotherapy management of LBP in the former, little is known about such management in developing countries **(Institute for Clinical Systems Improvement (2006.)** . LBP is recognized as a wide spread condition **(Maetzel, 2002).** Most episodes of acute low back pain are self limited, most of them resolve in about 6 weeks. Only 5% to 10% will develop chronic low back pain **(Boswell, Trescot & Datta, 2007).**

Low back pain reportedly occurs at least once in 85% of adults younger than 50 years, and 15-20% of Americans have at least one episode of back pain per year. Of these patients, only 20% can be given a precise pathoanatomic diagnosis. Low back pain affects men and women equally. The onset most frequently occurs in people aged 30-50 years. Low back pain is the most common and most expensive cause of work-related disability in the United States. Low back pain is not a common complaint in children and, when present, is more likely to have a serious etiology, such as infection or malignancy **(van Tulder et al., 2000 & van Tulder and Koes, 2003).**

Chronic low back pain (CLBP) is a common symptom that presents as localized or widespread pain in the lower back. Often, it is accompanied by lack of flexibility and tenderness in the lower back. This condition is defined as activity intolerance due to lower back or leg symptoms (sciatica) lasting more than three months (Waddell, 1998). CLBP can be difficult to diagnose and manage **(Maetzel, 2002).** Back pain mainly affects adults of working age, particularly people aged between 40 and 60 years. Approximately 60-80% of the populations have experienced back pain at some point in time **(DICE, 2006**). Back pain is sometimes referred to as mechanical back pain, idiopathic back pain, non-specific back pain, backache, or lumbago **Ernst et al., (2001)**. The main goal in treating and managing chronic low back pain is to control pain levels and prevent disability **(Maetzel, 2002).**

There are number of rehabilitation interventions which are used in the management of people with LBP. Among current experimental musculoskeletal interventions specific for LBP available to rehabilitation specialists, there are body mechanics and ergonomics training, posture awareness training, strengthening exercises **(Hayden et al., 2005)**

Management of CLBP includes such interventions that incorporate exercise and strengthening exercises and interferential current stimulation, as key elements for the treatment and should become part of the patient life-long daily activity. Such therapies which the patient can continue at home

usually have the most permanent and long lasting effects. **(Hayden et al., 2005)**

Nursing interventions that designs a tailored Home Education Program (HEP) is usually the most efficient and cost effective in management of patient with CLBP. Nursing intervention that uses a health education approach to empower participants through a process of assessment, education and skill building, leads to improved quality of life **(The Philadelphia Panel, 2001)**.

Aim of study:

The aim of the study was twofold:

First: to asses the effectiveness of a Rehabilitative Nursing Intervention on patients with Chronic Low Back pain immediately after the intervention and three months later.

Second: to assess the effect of these interventions on patient's quality of life and patient's satisfaction.

Subjects and Method

Design:

A Quasi experimental research design was used with three months follow-up

Setting:

The study was implemented in the out-patient clinic of the Physical therapy department in Menoufiya University Hospital from March 2008 to December 2008.

Subjects:

70 patients, diagnosed with chronic low back pain who accepted to be included in the study were enrolled. The inclusion criteria were: age 18 years and over, diagnosed with chronic LBP persisting for 90 days or more, their weight ranged from 70-75 kgms, and having a telephone number for regular contact. Patients were excluded from the study if they had: congenital spinal disorder, surgical intervention less then 6 months ago, presence of a tumor, osteoporosis, pregnancy and presence of Pott's disease.

Limitation of the study:

Drop out cases: The total subjects' number at the initial and diagnosis phase were 78 participants. During the follow up phase 8 dropped out from the study for personal reasons and did not complete the study.

Study tools

1. ***Basic demographic data*:** An interview questionnaire was developed to cover such data as: education, income, occupation, Address, or telephone number. These interviews included questions about details of the back pain episode, medications …..

2. ***The Short Form Health Survey (SF-36)*** **developed by Ware 1992, 1993**: This is a well known general quality of life questionnaire that measures health-related functioning in eight subscales: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), vitality (V), general health perceptions (GH), social functioning (SF), role limitations due to emotional problems (RE) and mental health (MH). The SF-36 reports patients' perceived quality of life by scores ranging from zero to 100, where 100 is the best and zero is the worst score (Ware etal.,1993) The validity and reliability of the Arabic translation of the SF-36 is measured by two experts in the field of English and Arabic who translated the English version to Arabic and back to English. The differences between the tow experts were calculated and proved high inter- rater reliability (r=89).
3. ***Oswestery Disability Questionnaire :*****(Fairbank & Pynsent, 2000)** The Oswestry Disability Questionnaire (ODQ) was designed to assess pain-related disability in persons with low back pain. The same measures for reliability were established. The (OQ) is also a validated instrument for measuring disability related to LBP. It is composed of 10 six-point scales, with the first one rating intensity of pain and the other nine measuring disability in different contexts of daily living. The patient marks the statement(s) in each section that best describes his/her state. Each section is scored on a scale from 0 to 5, and the higher the value, the greater the disability. Although it is usually given as a percentage of the maximum possible score, the score ranges from 0 (no disability) to 50 (maximum disability).

Scoring of ODQ: **:(Fairbank & Pynsent, 2000)**

The ODQ contains 10 sections, for each section the total possible score is 5: if the first statement in a section was marked, the section score will be 0, for example, if the patient reported: I can lift heavy weights without extra pain, a zero score was given and if reported: I cannot lift or carry anything without pain, he will get a score of 5.

If all ten sections are completed the score is calculated as follows:

Example: If the patient total score -in the ten sections- was 16 out of 50, it means 32%. If one section is missed or not applicable the total score for the sections will be 45 instead of 50 and the score is calculated as follow: 16 (total scored) divided by 45 (total possible score) x 100 = 35.5%.

4. Patient satisfaction:

Satisfaction with back care measured by response to the following items "Overall, How would you describe your satisfaction with the care for your back that you have received? Likert scale response options included: very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied **(Curtis et al., 2000)**.

Data Collection:

Participants who were willing to comply with the entire study protocol were personally interviewed after taking an oral consent and the questionnaire was filled in the outpatient clinic. The procedures and the purposes of the study were explained.. Participants (n= 70) were assigned into two groups by matching them according to their age, weight and degree of disability.

Group I (n=31) received Medical Intervention (MI) and management modality that included: strengthening exercises (for back and abdomen) and Interferential Current Stimulation (ICS) for a period of three months.

Group II (n=39) received (MI) under the doctor's supervision and a Self Back Education Package (SBEP) regarding body mechanics to do at home after demonstration and Re-demonstration in a biweekly refreshment sessions at clinic. It included instructions about: posture, exercises to strengthen back-abdominal muscles, and exercises to decrease back strain. Both groups received an initial physician evaluation and subsequent treatment is prescribed.

A group of four nurses were recruited and trained by the researchers, to educate the subjects on how to perform the body mechanics' maintain good posture, perform safely exercises to strengthen back-abdominal muscles, and exercises to decrease back strain. In addition, nurses met with group 1 to schedule the times for attending to the clinic 3 times per week for exercises and ICS, and empower them to attend regularly for the follow up sessions as prescribed by the physician. Nurses make sure that group II fully understand and can competently perform the principles and rules as described in the SBEP package and emphasize the importance for complying to perform it regularly .Also, to attend for refill of medication as prescribed by the physician.

The intervention:

1. **The medical intervention**. It was given to the two groups it included Non-steroidal anti-inflammatory drugs (NSAIDs) and Muscle relaxants (benzodiazepines) that are effective in reducing the pain., and nerve tonics medication.
2. **Exercises:** to strengthen Back-Abdominal Muscles: **(Hayden et al., 2005)**
   - **A.** Wall slides to strengthen back, hip, and leg muscles
   - **B.** Stand with your back against a wall and feet shoulder-width apart. Slide down into a crouch with knees bent to about 90 degrees. Count to five and slide back up the wall. Repeat 5 times.
   - **C.** Leg rises to strengthen back and hip muscles: Lie on your stomach. Tighten the muscles in one leg and raise it from the floor.

Hold your leg up for a count of 10 and return it to the floor. Do the same with the other leg. Repeat five times with each leg.

D. Leg rises to strengthen stomach and hip muscles:

Lie on your back with your arms at your sides. Lift one leg off the floor. Hold your leg up for a count of 10 and return it to the floor. Do the same with the other leg. Repeat five times with each leg. If that is too difficult, keep one knee bent and the foot flat on the ground while raising the leg.

Also, sit upright in a chair with legs straight and extended at an angle to the floor. Lift one leg waist high. Slowly return your leg to the floor. Do the same with the other leg. Repeat five times with each leg.

E. Partial sit-up to strengthen stomach muscle:

Lie on your back with knees bent and feet flat on floor. Slowly raise your head and shoulders off the floor and reach with both hands toward your knees. Count to 10. Repeat five times.

3. Exercises to decrease back strain: (Hayden et al., 2005)

Lie on your back with your knees bent and feet flat on your bed or floor. Raise your knees toward your chest. Place both hands under your knees and gently pull your knees as close to your chest as possible. Do not raise your head. Do not straighten your legs as you lower them. Start with five repetitions, several times a day.

Stand with your feet slightly apart. Place your hands in the small of your back. Keep your knees straight. Bend backwards at the waist as far as possible and hold the position for one or two seconds.

4. Interferential current stimulation

Interferential stimulation has been investigated as a technique to reduce pain, improve range of motion, or promote local healing following various tissue injuries. There are no standardized protocols for the use of interferential therapy; the therapy may vary according to the frequency of stimulation, the pulse duration, treatment time, and electrode-placement technique. **(Zambito, Bianchini & Gatti, 2006).**

5. Back care Education (instruction)

The key concept for maintaining a healthy spine is to strive for balanced stresses to the joints with dynamic neutral alignment during activities of daily living. Postural awareness, use of good body mechanics, and regular exercise can help patients manage, alleviate, and prevent back pain. **(Claiborne et al., 2002)**

Statistical analysis

Data was statistically analyzed using SPSS (statistical package for social science) program version 13 for windows and for all the analysis p value < 0.05 was considered statistically significant. Data are shown as mean, range or value and 95% confidence interval (95% CI) for frequency and percent.

Chi square test was done for qualitative variable analysis and p-value < 0.05 was considered significant.

Paired t test was done to detect mean and standard deviation of normally distributed pre and post values of the same variable of the same group of patients and p-value < 0.05 was considered significant.

Independent t test was done to detect mean and standard deviation of normally distributed pre and post values of the same variable of the same group of patients and p-value < 0.05 was considered significant.

ANOVA test was done to compare three variables ; one qualitative variable and the other two are quantitative variables of normally distributed variables and p-value < 0.05 was considered significant to detect mean and standard deviation where post hoc tests done to detect the relationship between variables within groups .

LSD test is a post hoc test it was done to variables of significant difference of more than two groups of normally distributed data after ANOVA test to detect the significant difference between either groups.

Results:

The total number of patients included in the study was 70. The age of patients in each group ranged from 27 – 60 years with mean age of 46.01 ± 9.06. Forty percent were male patients and sixty percent were female patients, with 12 % reported mild disability, 65 % moderate and 23 % severe disability in each group.

Table (I) showed that, there were no statistical significant differences between the two groups regarding educational level, occupation and family income (p- value > 0.05).

Table (2) overall ,There was no statistical significant differences between two groups regarding to total score of quality of life (p- value > 0.05) in which the mean score of both groups are approximately similar. There were highly statistical significant differences of all quality domains pre - post intervention. In group I there was an improvement in mean QOL score in all domains except for role emotion. Likewise, there were a highly statistical significant differences of all quality domains pre - post intervention in group II, where there was an improvement in mean QOL score in all domains except for physical functioning domain.

Table (3) illustrated that there was no statistical significant association between disability level and total score of QOL in each studied groups. ANOVA test results were (1.76 for group I and 1.96 for group II) .It means, there were not any differences among two groups regarding the disability level.

Table (4) showed a highly statistical significant difference between the two studied groups regarding to the disability levels at the post intervention (p- value < 0.01). The moderate and sever disability were

reported more frequently by group I (54.8% and 22.6%) than those of group II (15.7% and 10.3%). In group II, moderate and severe disabilities were decreased and were converted to mild disability.

Table (5) illustrated patient's satisfaction related to the two interventions among two groups. There was no statistical significant difference among two groups regarding patient satisfaction with nearly equal mean (3.0323 ±1.30343, 3.5385 ± 0.85367) respectively.

Fig (1) showed no statistical significant difference between mean score CLBP disability levels and total score QOL of two groups 3- months after intervention .The highest mean score was 60.94 ± 1.91 while the lowest was56.69 ± 3.76 in group I. But the highest mean score was 59.7 ± 3.92 while the lowest was 54.6 ± 3.89 in group II.

Discussion:

Kovacs et al. (2004) reported that low back pain (LBP) is one of the most frequent ailments in the industrialized world, and it may have an impact on the functional status of the individual with LBP. Also, LBP is the most expensive cause of disability related to work in terms of Workers' Compensation and medical expenses. It is the most frequent reason for work-related disability.

The Philadelphia Panel, (2001) was convened to evaluate rehabilitation interventions for chronic LBP, selected Electrical stimulation, combined rehabilitation interventions as the two interventions for CLBP rehabilitation.

Abasolo, Blanco & Bachiller (2005) illustrated that; LBP can interfere with activity that ranges from basic activities of daily living such as walking and dressing to many work-related functions. This is in congruent with the present study findings, although the two groups of the present study were matching in almost all the concerned variables, they both reported having LBP that affect the quality of their life at the study baseline before intervention. After receiving the Rehabilitative Nursing intervention, both groups reported that, the quality of life improved with highly statistical significant differences of all quality domains except for "role emotional" for exercise group and "physical function" for SBEP group (Rating Quality improvement 60.7 % for type I intervention and 60.0 % for type II intervention). .This may be because, LBP is debilitating and restrictive and causes distress and frustration to the person experiencing it, also, the cost of coming to the clinic 3 times every week and the related effort may cause emotional stress. A study by **Horng et al., (2005) and Tavafian et al., (2007)** on LBP has found that, the health related quality of life of patients with low back pain depended on functional status and psychological factors more than simple physical impairment. **Shaughnessy & Caulfield (2004)** found that ,exercise therapy practiced by their studied group, have improved

the mental health status of the patients more than in the clinic group who spend more money and effort to attend to the clinic more frequently.

It might seem obvious that pain determines disability in patients with CLBP. **Fairbank & Pynsent, (2000), Kovacs, et al. (2004), and Horng et al., (2005)** reported that, self-assessment pain and disability scales correlate with pain and disability better than objective measures of physical performance. However, the findings of the present study showed that there was no statistical significant association between disability level and total score of QOL in each of the studied groups, may be due to the interference of other factors unrelated to LBP that may influence quality of life. **Abasolo et al., (2005)** emphasized that, there is sparse evidence on the correlation between LBP and decrease in quality of life, and there are few data on the correlation between pain and disability with quality of life. Like wise, **Kovacs, et al. (2004),** illustrated that clinically relevant improvements in pain may lead to almost unnoticeable changes in disability and quality of life. In addition, **Shaughnessy & Caulfield (2004)** emphasized that, their is evidence that exercise training could improve functional ability and quality of life in patients with low back pain.

The findings of the present study revealed no statistical significant differences between the two groups regarding to the total score of quality of life at the post test, in which the mean score of both groups are approximately similar at the post intervention. This finding means that “no intervention was better than the other”. Also, the improvement in all quality of life scales might be related to the reduction of bodily pain which eased the performance of daily activities, and diminishing the risk of disability due to learning to have a more healthy body mechanics and development of personal coping mechanism. Exercise has shown to benefit many patients. In addition, patient education to remain active and use appropriate body mechanics is beneficial. **Van Tulder et al., (2000)** concluded that exercise has been shown to improve function and decrease pain in adult patients with chronic LBP and that (ICS) was more beneficial for the treatment of acute and chronic LBP. This finding is in congruent with the findings of the present study where almost one tenth of group II (who receive the self instruction Package) reported having severed disability to perform daily living activities compared to more than one fifth of group I who received the intervention. These findings were also supported by **Hayden et al., (2005)**. A systematic review of exercise therapy for low back pain conducted by **Assendelft et al., (2004)** and **VanTulder et al., (2000)** concluded that, exercises may help chronic low back pain patients return to normal daily activities and work. Exercise and nonsteroidal anti-inflammatory drugs are the "cornerstones" of non-surgical treatment.

The present study revealed that, there was no statistical significant difference among the two groups regarding patient's satisfaction due to using the two different rehabilitative nursing interventions .This means that, the two nursing interventions were similar in its effect on the two groups and they were satisfied with the intervention and its outcomes. This may be attributed to the effort and time spent with the patient to demonstrate the exercises, patients' follow up and adherence to the management protocol. This was congruent with **Curtis et al., (2000)** who reported that, Patient's satisfaction with care has been shown to correlate with outcomes. Also, **Curtis et al., (2000)** illustrated that, communication, time spent with the patient, and manual evaluation and treatment skills might be important variables affecting outcome. On the other hand, **Deyo, et al., (1998)** suggested that dissatisfaction with care for low back pain was related to failure to obtain an adequate explanation from the physician or the nurse.

Conclusion:

Overall, both nursing modalities that were used in the present study were effective to reduce the disability, pain. Also, all quality of life domains of patients with chronic low back pain were improved except with emotional role in group managed by strengthening exercises (for back and abdomen) and Interferential Current Stimulation and except with physical functioning in group managed by Self Back Education Package (SBEP) .In addition, the two modalities have the same effect on patient's satisfaction.

Recommendation:

- Further research is needed to study the effect of different nursing interventions on improving functional status and psychological state for patients with LBP.
- Patient education in physical medicine clinics to inform patients to remain active and use appropriate body mechanics is beneficial, which further improves the effectiveness of care and cost for patients and health care system.
- Start with SBEP as a best intervention of choice to reduce disability and pain and improve QOL aspects for patients with CLBP, since it was cost and time effective besides to the nonsteroidal medical management

Table (1): Personal characteristics of patients with chronic low back pain.

Demographic characteristics	Groups				X^2 test	P. value
	G1(N = 31)		G2(N = 39)			
	No	%	No	%		
Education level						
-Illiterate	6	8.6	7	10.0		
-Read/write	8	11.4	9	12.9	0.15	0.99
-basic education	7	10.0	9	12.9		
-secondary education	7	10.0	10	14.3		
-High education.	3	4.3	4	5.7		
Occupation						
-House wife /not work	19	27.1	20	28.6		
-Farmer	3	4.3	10	14.3	5.05	0.17
-Manuel work	2	2.9	5	7.1		
-Professional work	7	10.0	4	5.7		
Family Income						
-More than enough	9	12.9	6	8.6		
-Sufficient	12	17.1	25	35.7	4.53	0.10
-Insufficient	10	14.3	8	11.4		

** Significant correlation ≤ 0.05*

Table (2): Mean score of QOL dimensions of patients with chronic low back pain (pre – post) intervention

QOL Domains	Groups							
	G 1 (n=31)				G 2 (n =39)			
	Pre	post	Paired t	p-value	pre	post	Paired t	p-value
Health Perception	55.5±7.2	67.9±6.2	11.9*	0.0001	61.5±5.9	64.8±5.4	4.9*	0.001
Physical function	42.3±7.9	52.3±9.9	7.3*	0.0001	47.9±15.9	49.8±16.5	1.7	0.09
Role-physical	57.1±6.6	62.9±7.6	5.9*	0.0001	54.0±8.6	54.8±8.3	3.1*	0.003
Role-emotion	56.3±5.6	57.1±5.8	1.4	0.18	56.1±8.4	60.5±6.9	6.4*	0.001
Social function	57.2±6.7	58.1±7.1	4.3*	0.0001	58.1±13.8	76.7±12.8	9.3*	0.001
Bodily pain	50.1±11.2	69.6±10.6	7.04*	0.0001	54.3±11.9	61.1±10.7	4.1*	0.01
Vitality	57.6±6.2	74.7±9.5	8.1*	0.0001	54.1±8.7	76.8±5.8	13.56*	0.0001
Emotional wellbeing	57.1±6.7	58.1±7.1	4.3*	0.0001	58.1±13.8	76.7±12.8	9.3*	0.001
Total score of QOL	54.1± 7.3	60.7± 3.78	4.47*	0.0001	48.6± 10.6	60.1 ± 3.9	6.36*	0.0001
t- test = 0.65							*p- value* > 0.05	

**** Significant correlation ≤ 0.05***

Table (3): Relation between disability level and Total score of QOL groups after three months of intervention.

Studied Aspects		Disability level			ANOVA Test:	P -value
		Mild Mean ± SD	*Moderate* Mean ± SD	*Severe* Mean ± SD		
Group I	***Total score of QOL***	60.94 ± 1.91	59.79 ± 3.45	56.69 ± 3.76	1.76	> 0.05
Group II	***Total score of QOL***	59.7 ± 3.92	57.6 ± 2.82	54.6 ± 3.89	1.96	> 0.05

Significant correlation ≤ 0.05

Table (4): Number and percent distribution of disability levels between the two groups three months after intervention.

Disability category	Groups				Chi square	p-value
	G1 (n= 31)		GI1 (n= 39)			
	No.	%	No.	%		
Mild disability	9	22.6	29	74.3	14.47	0.001*
Moderate disability	15	54.8	6	15.4		
Severe disability	7	22.6	4	10.3		

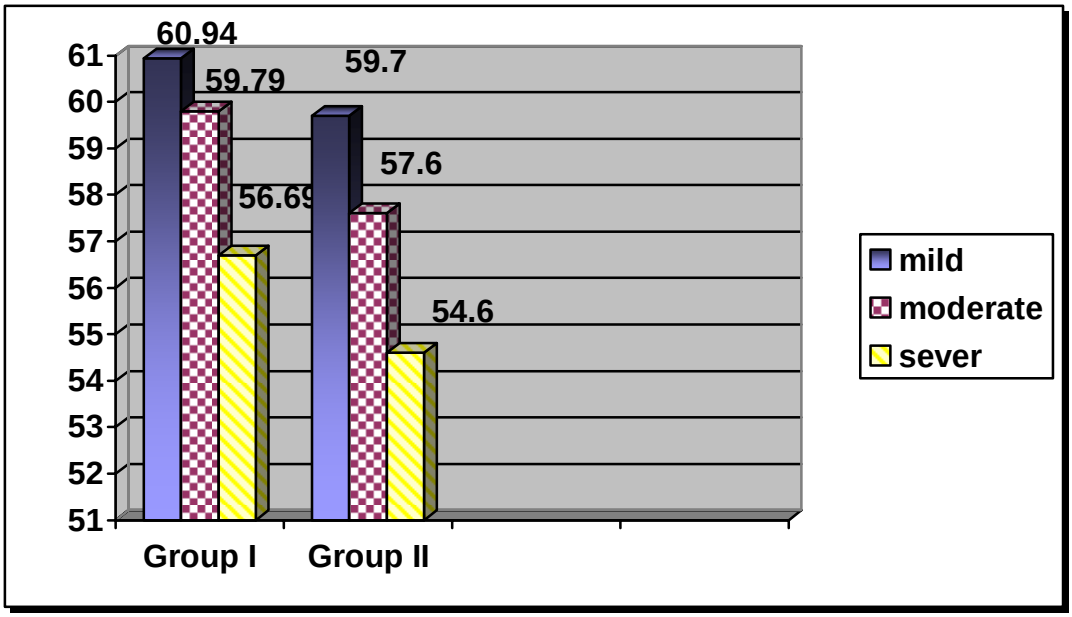
Significant correlation ≤ 0.05

Table (5): Patient satisfaction regarding the two different intervention modalities

Groups	Patient's satisfaction	T- test	Sig.	P. value
	Mean ± SD			
Group I (n= 31)	3.0323 ± 1.30343	-1.956	0.06	>0.05
Group II (n= 39)	3.5385 ±. 0.85367			

Significant correlation ≤ 0.05

Fig (1): Relation between mean score disability levels and total score QOL of two groups 3- months after intervention.



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تأثيرالتدخل التمريضى التأهيلى على مرضى آلام أسفل الظهر المزمن

مقدمة :
تعتبر آلام اسفل الظهر المزمنة من المشاكل الصحية الشائعة فى العديد من الدول. يعانى مرضى آلام أسفل الظهر المزمنة من مشاكل كبيرة سواء جسمانيا ، إجتماعيا، نفسيا وكذلك مشاكل مرتبطة بالقدرة على العمل . وعلى الرغم من كثرة الابحاث فى المجال ، إلا أن تأثير التدخلات التمريضية فى الدول النامية لم يتم التعرف عليها بالطريقة المؤثرة والواضحة.

هدف البحث : يهدف البحث إلى
١ – إختبار تأثير نوعين من التدخلات التمريضية على تأهيل المرضى المزمنين بآلام أسفل الظهر بعد التدخل مباشرة وكذلك بعد ثلاثة اشهر من تنفيذه .
٢ – التعرف على مدى رضاء المرضى من المتدخلين .

عينة البحث :
اشتملت عينة البحث على ٧٠ مريضا تم تشخيصهم من قبل طبيب الطب الطبيعى بالمستشفى الجامعى بشبين الكوم . وقد تم تقسيمهم تقسيما تطابقيا على مجموعتين:

- **المجموعة الاولى** : اشتملت مبدئيا على ٣٩ مريضا – ثم إنسحاب ٨ منهم لاسباب شخصية بذلك أصبحت هذه المجموعة فقط ٣١ مريض . التدخل التمريضى لهذه المجموعة احتوى على العلاج الطبى التقليدى الى جانب التدخل التمريضى لمدة ٣ شهور والذى تكون من تمارين لتقوية عضلات الظهر البطن الى جانب تنبيه كهربى للعضلات .
- **المجموعة الثانية** : تكونت من ٣٩ مريضا ثم صرف العلاج الطبى التقليدى لهم الى جانب تزويدهم بكتيب عن الام اسفل الظهر والتمارين التى يجب أن يقوم بها المريض فى المنزل وكذلك ميكانيكية حركة الجسم والوضع الصحيح للجلوس والإنحناء . وقد تم تدريبهم علي هذه التمارين من قبل الباحثين وكذلك التأكيد علي كيفية عملها كل اسبوعين أثناء حضور المريض للمتابعه مع الطبيب .

تم تدريب عدد ٤ ممرضات للمشاركة في التدريب علي تطبيق محتويات الكتيب للمجموعه الثانيه وكذلك لتحديد مواعيد تنفيذ التمريض للمجموعه الاولي ثلاث مرات أسبوعياً .

ادوات البحث:
إشتملت أدوات البحث علي :

- إستمارة إستبيان للبيانات الاساسيه و الشخصية عن المريض .
- إستماره إستبيان مصممه من قبل ware ١٩٩٣ , ١٩٩٢ , – لقياس نوعية الحياة و تمت ترجمتها الي العربيه ثم الي الانجليزيه لقياس ثبات ومصداقية الترجمه بواسطة إثنتان من اساتذة اللغه الانجليزيه الناطقين بالعربيه (معدل الثبات r=89)
- إستبيان اديسويستري لقياس القدره Oswestery disability questionnaire والذي صمم لقياس تأثير الالم علي عدم القدره للمرضي بالالام أسفل الظهر .

- إستماره ليكيرتيه لقياس مدي رضاء المريض عن الرعايه التي قدمت له والتي صممت من قبل كيرتس واخرين ٢٠٠٠

النتائج :
أسفرت نتائج البحث عن إستفادة ٦٠,٧ % من المجموعه الاولي و ٦٠ % من المجموعه الثانيه من التدخلات التمريضيه وكذلك تحسن نوعية الحياة بعد ٣ اشهر من التـدخلات كـان تقريبـاً متساوياً بين المجموعتين وكذلك تبين رضاء المجموعتين عن التدخلات التمريضيه . ان التدخل بالتدريب والارشاد والمتابعه المنزليه لتمارين تقوية عضلات الظهر والبطن يعتبر تدخل نـاجح ولا يقل عن التدخل الاول علي الرغم من انه قليل التكلفه الماديه والاجهاد للمريض .

التوصيات :
تدريب المرضي علي استمرار النشاط والحركة وممارسة التمارين الرياضيه لتقوية عـضلات الظهر والبطن حيث انها اوفر وايسر السبل للمحافظه علي الظهر وتقليل نسبة العجـز وعـدم القدره وتحسين نوعية الحياة .

Life-style of Epileptic School Students

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Abstract

Epilepsy is one of the most important non communicable neurological illnesses, with no age, racial, social class, national or geographic boundaries. Epidemiological studies have made it clear that the magnitude of the problem makes it a public health priority since epilepsy affect at least 40-50 million people worldwide, the majority of them live in developing countries. Epilepsy represents a heavy burden on patients, their families and the community. At least 50% of epileptic cases begin at childhood and adolescences, which prevent the child from normal life and impede his psychosocial integration as well as his contribution as an effective member in the society. So the present study was aimed at identifying the life style of epileptic school students. The study was carried out on 220 grand mal epileptic students attending the six neuropsychiatry clinics affiliated to the second and third zones in Alexandria. The results revealed that most of the studied sample were taking sufficient amount of food and had normal sleeping pattern, but more than half was not practicing any type of exercises. More than half had some problems with their parents including over protection. Less than two thirds of students never failed while rest had repeated a grade either once, twice or triple. So it is recommended that the community should be educated about nature of epilepsy to help epileptic person to adapt with his condition and live normal life.

Introduction:

Childhood and adolescent period is a critical period of person's life. In this stage, children are usually exposed to some common illnesses, some can significantly shorten the life span of the children, others greatly alter their quality of life which refer to chronic diseases **(CDC 2003 and Weiler & Colvert, 1999)**

According to center for disease control and prevention **(CDC) (1997)** epilepsy has been recognized as a life altering chronic condition since a long time. Even with its unique manifestations, epilepsy shares characteristics with a variety of chronic conditions, it affects many aspects of person's life, it is relatively difficult to detect and it tends to contribute to morbidity rather than mortality.

Many definitions for epilepsy have been offered. **WHO (1998)** defined epilepsy as a recurrent disorder characterized by out bursts of excessive activity in part or the whole of the brain, the activity may

remain localized or may spread to involve the whole cerebrum. Moreover, Several literatures recently define epilepsy as sudden alteration in normal brain activity that causes distinct changes in behavior and body function **(Stead & Vaughn 2001, Green & Singleton, 2001 and Stewart 2001)**. Also, **Wong and Winkelestein (2002)** defined epilepsy as chronic neurological disorder with recurrent and unprovoked seizures, while seizures are a brief malfunction of the brain's electric system resulting from cortical neuronal discharge.

The Neurological Center (1999) and WHO (2001) pointed out that Epilepsy is known as the most common serious neurological condition with unexpectedly high frequency and severity in many parts of the world. It is estimated to affect at least 50 million in the world, the majority of them living in developing countries and about 10 million live in African regions which represents a heavy burden on patients, families and economy in both developed and developing countries.

In Egypt, it was reported that 0.5 to 1% of the population suffers from epilepsy with prevalence rate of 643,639 approximately **(Statistics by country for epilepsy, 2009)**. In Alexandria, the prevalence rate of active epilepsy was 141.4/ 100.000 among health insured individuals **(Hassan, 1990).**Also, in a simple interrogation of a cluster population sample in Karmouz west the prevalence rate of epilepsy was 1.6 per 1000 among children regardless their age **(Kamel, 1993)**.

Epilepsy is a chronic disease with many causes, but it is clear that genetic cause is present in up to 20% of patients either alone or with conjunction with other causes **(Elmslie et al; 1997).** Furthermore, **WHO (1998)** classified the causes of epilepsy to 3 major groups including perinatal, prenatal and postnatal causes. Others classify the causes of epilepsy into idiopathic and secondary or acquired causes.

Regarding idiopathic causes it constitutes about two thirds of cases. Although the cause of idiopathic epilepsy is unknown, genetic factors may in same way alter the neuronal discharge. Epilepsy also can be acquired or secondary as a result of brain injury, Tumor, infections Toxins…etc **(Bunker 1999).**

The international classification of seizures includes three main groups; generalized seizures, partial seizures and unclassified seizures **(Smeltizer & Bare, 2000).** Moreover, other forms classified seizures according to their frequency into isolated epileptic seizures, repeated epileptic seizures and prolonged repetitive seizures **(William, 1998).**

Despite the advances in basic science including new Technology in detection and diagnosis of epilepsy. In addition, to new powerful antiepileptic drugs and surgical techniques which may lead to proper

control of epilepsy in 75% of cases, there is still a need to comprehensive management since epilepsy is a disease requiring a life long adjustment, which impose extensive emotional, social and behavioral demands on epileptic patients, specially young cases. Theses demands usually alter their life style including their daily living activities (dietary habits, sleeping pattern, hygiene and exercises) and other life style components as social relations, scholastic achievement, compliance to treatment and safety **(Wong& Winkelestein, 2002)** so nurses can play a key role in assisting the young epileptics to live normal life through maintaining daily living activities at optimal level and enhancing their quality of life. Young epileptics should also be encouraged to change their entire life including every aspect of their lives at home, school or work to facilitate the adjustment process and minimize the disruption of their life style **(Tierney & Stephen, 1999).**

Aim of the study:

To identify the life style of epileptic school students.

Material and Methods:

Research design: Descriptive design was used

Setting:

The study was conducted in six neuropsychiatry clinics affiliated to two health insurance zones in Alexandria, the second and third zone. These clinics are named: - Elfaran, El-Manshea, Sidi Gaber Elgidida, Bacaus, shots and Sidi Gaber.

Sample:

By using multistage method, two zones (second and third zone) out of six health insurance zones were selected based on high attendance rate of the epileptic students to the clinics in these zones. Six neuropsychiatry clinics affiliated to the two selected zones were included in the study.

By using proportion allocation method, 50 % of at least one year registered grand mal epileptics students and who were attending the above mentioned neuropsychiatry clinics were selected randomly from age group 8-18 years and from both sexes. The total number of epileptic students was 220 students

Tool:

A structured interview sheet was developed by the researchers of the study. It was formed of the following parts:

- General characteristics of studied epileptic students
- Health history of studied epileptic students

- Life style of studied epileptic students (e.g. dietary habits, sleeping pattern, physical exercises, social relations, scholastic achievement, safety precautions…etc)

Methods:

The study was conducted over a period of ten months starting from July 2001 to April 2002. An informal oral consent was obtained from studied students before interviewing them. The purpose of the study was explained and they were assured that the information they gave would remain confidential and will be used for the purpose of the study. Student's health records were reviewed to collect data history of the disease. Also nutritional status of the studied sample by calculating their body mass index (BMI) according to the following metric formula BMI= weight in Kilograms ÷ (height in meters) ². Then the following references weight values were used.

BMI – for – age > 5^{th} -< 85^{th} percentile. ⟶ Normal weight

BMI – for – age > 5^{th} percentile. ⟶ Under weight

BMI – for – age ≥ 85^{th} percentile. ⟶ At risk of over weight

BMI – for – age ≥ 95^{th} percentile. ⟶ Overweight

(Himes& Dietz,1994, Dietz & Bellizzi,1999 and National center for chronic disease prevention& health promotion, 2001).

1. Regarding food consumption pattern, the daily proteins, carbohydrates, vegetables and fruits intake was calculated according to food guide pyramid of Canada and The local food composition tables of nutrition institute and was classified into three categories (adequate – inadequate – not taken) **(Nutrition Institute Food Composition for Egypt, 1996 and Painter, Rah & Lee, 2002**

Statistical Analysis:

The collected data were organized, categorized and tabulated using actual number, percentages and weighted arithmetic mean. Chi-Square test was used at 5% level of significance.

Results:

Table (1) illustrates the general characteristics of the sample. Regarding students' age, it ranged from 8 to 18 years with a mean of 13.12 ± 2.76 years. Less than one third ((30.9) of the students were 8 to less than 12 years old, while about half of them (45.5%) were 12 to less than 16 years old. Those in the age group of 16-18 years constituted 23.6% of the sample. Concerning students' sex, it can be observed that more than half of the sample (55.9%) were males and the rest (44.1%) were females. As regards to their educational level, it was found that more than one third of the sample (35.0%) were in primary school while

less than one third (31.8%) of them were in preparatory school and 20.5% were in technical secondary school. However more than one tenth (12.7%) of them were in secondary school, the majority of the students (90%) were living with both parents, while minority were living with either mother, father or grandparents only.

Table (2) presents the health history of the studied sample. More than half of the sample (53.7%) had normal body weight, while 7.7% of the students were under weight, slightly less than one fifth (19.5%) of them were at risk of over weight and those who were over weight constituted 19.1% of the sample. Regarding onset of first epileptic fit, about half of the study sample (49.5%) had their first epileptic fit since one to less than 5 years. While 35% of them had their first fit five to less than 10 years ago. Those who had their first fit since 10 years or more constituted 15.5% of the sample with a mean time of 5.44 ± 3.52 years. It also observed that more than one quarter (28.2%) of the sample had last fit less than one month, while about one third (31.8%) of them had their last fit since one to less than 5 months. A percents (40%) of the students had their last fit since 5 and more. Mean of 6.30 ± 7.56 month. The study shows that the number of fits in the last 6 months ranged from no fits to 80 fits with a mean of 7.63 ± 12.67 fits. Those who had no fits since 6 months represented (37.7%) of students. As regard onset of asking medical advice, less than half of the sample (49.1) asked for medical assistance at the same day of the occurrence of the first epileptic fit, while 17.7% asked for medical advice either in a period less than one month since the first fit or one to less than 10 months. The mean time for seeking medical advice was 2.51 ± 5.58 month. Regarding the type of therapy, it was found that slightly less than two thirds of the study sample (63.2%) were treated by only one antiepileptic drug while 36.8% were treated by more than one i.e. combination of two or more drugs. As regard the family history of epilepsy, most of the students (75.5%) had no family history. Half of the rest of them had relatives such as uncle, and cousin…etc and (42.6%) had siblings with epilepsy. Epileptic parents constituted only 14.8% of the sample.

Table (3) presents the relation between food consumption pattern and general characteristics of the studied sample. The tables reveals that student' age, birth order , family members whom the student live with, mothers' education and occupation and family income had no significant effect on their food consumption pattern. However, a significant difference was found between students' sex and their food consumption pattern (X2 = 5.206). Male students were more than female students in taking sufficient food.

Table (4) illustrates the sleep pattern of the studied sample. The majority of the studied sample (92.7%) were sleeping 8 hours / day, while only 5.5% of them were sleeping more than 8 hours / day. with a mean of 8.09 ± 0.55 hours / day. The table also shows that nearly half of the sample (49.5%) were not sleeping during the day, while less than one quarter (23.2%) were sleeping less than 2 hours. those who were sleeping 2 hours or more constituted 27.3% of them with a men of 0.88 ± 1.09 hours. The table also reveals that about two thirds of studied sample (60.5%) had no sleeping problems while 44.8% of those who had sleeping problems complained of interrupted sleep, difficulty to sleep or both.

Table (5) concerning the students' practices of physical exercises. The table shows that more than half of the sample (60.9%) were not practicing any type of physical excises, while the rest of them (39.1%) were practicing. Regarding place of exercises, less than half of those who were practicing exercises (40.7%) were practicing at school, while 30.2% of them at home and 26.7% and 19.6% at street or club respectively. Concerning the causes of non practicing; it was observed that less than half (40.3%) of those who were not practicing exercises were afraid of occurrence of any problems, while 28.4% of them said that they do not like exercises. Those who had no place or time to practice were 20.9% and 17.2% respectively. However minority (10.5%) of them stated that exercises are not allowed for them.

Table (6) presents safety practices carried out by students and their families. Regarding high places, more than half of the sample (58.2%) were not avoiding high places, while the rest avoid. The table also shows that 58.2% of the studied sample could not stay alone at home; while the rest (41.8%) were not allowed. Concerning walking or passing street alone, it could be observed that most of the students (75.5%) and (73.6%) could walking or passing street alone respectively. While 24.5% and 26.4% of them could not walk or pass street alone respectively. Regarding sun exposure, less than one tenth (9.5%) of the sample were exposed to sun for less than one hour / day, while 43.7% of them were exposed one to less than 2 hours / day. Those who were exposed 2 to less than 3 hours / day or 3 hours or more constituted 36.8% and 10% respectively with a mean of 1.63 ± 0.97 hour.

Table (7) concerning the social relations of the epileptic students. The table reveals that less than half of the sample (42.7%) had no problems in dealing with their parents while more than half of them (57.3%) had some problems with their parents, such as parents' over protection and physical violence. The table also reveals that the majority of the sample (83.2%) had no problems with their siblings while the rest (16.8%) had some

problems, such a hitting, incongruent with each other and making fun of them. Concerning friends, it was observed that the majority of the sample (87.3%) had friends while the rest (12.7%) had no friends for different reasons, such as make fun of them, peers do not like to contact with them, or the epileptic students do not like to contact with others. Also the table reveals that more than one fourth of the students (25.1%) preferred to play alone, while more than half (53.7%) preferred their school colleges. Those who preferred to play with their siblings were 34.1% of them. About one fourth of the sample (24.4%) and (23.8%) preferred to play with their neighbors or relatives respectively. Few percentage (8.5%) and (0.5%) preferred to play with their parents or do not like playing at all respectively. As regard visiting relatives and friends, the table reveals that most of the study sample (83.2%) were visiting their relatives and friends while 16.8% were not, either because they do not like visiting, or their health status or not allowed by their parents. The table also portrays that most of the studied sample (83.2%) had no problems with their teachers, while the rest had some problems, such as violence or teachers do not engage them in school activities.

Table (8) portrays the scholastic achievements of studied sample. The table shows that less than two thirds of the students (63.2%) never failed while 53.1% of those who repeated a grade once. However, 29.6% and 17.3% repeated a grade twice and triple respectively. On the other hand more than half (55.5%) had never resit for any examination while 49% of those who resit had to resit for examination once, 17.3% twice and 33.7% of the students had to resit for examination three times. Concerning school attendance, the table shows that one fifth (20.0%) of the students did not miss a school day in the month prior to the interview, while about three quarters (74.4%) of them missed less than 7 days and those who missed one week or more constituted 25.6% with mean of 3.73 ± 4.15 days.

Table (9) reveals that students' age, birth order, mothers' education and family income had a significant effect on students' scholastic achievement (X^2_2=8.431, P=0.015, X^2_3=11.285, P=0.010, X^2_4=15.511, P=0.004, X^2_4=16.072, P=0.003 respectively). On the other hand the table shows that students' sex, family member whom the students live with and mothers' occupation had insignificant effects on the scholastic achievement of the studied sample (X^2_1=0.131, P=0.717, X^2_1=1.826, P=0.177, X^2_1=3.098, P=0.078 respectively).

Table (10) presents that a significant relation was found between type of therapy and scholastic achievement of the students (X^2_1=5.814, P=0.0159). Since students who receive only one drug had better

scholastic achievement (69.8%) than those who receive more than one drug (30.2%).

Discussion:

Epilepsy is a common and serious health problem. It is old as the human race. The early Greeks and then Romans looked upon epilepsy as curse by some capricious gods. This misconception has persisted through ages, even today, many epileptics and their families feel the stigma and suffer from social prejudice **(WHO, 1999)**.

In this respect the present study was done with the aim of highlighting the epileptic students' needs, common problems as well as their scholastic achievement. It will also help parents, teachers, health professionals and caregivers to pay special attention to epileptic students that help them to have normal life as their mates.

The findings of the study revealed that more than half of the epileptic students were males, and the rest were females. Similar findings were drawn from different studies **(Ramadan, Bedwani & El-Ghamry, 1991 and Reiner & Submerge, 2001).** The vast majority of the students were living with their parents while the rest were living with only the mother, father or relatives. More than half of both mothers or fathers were either could just read and write or illiterates. Also three quarters of the students' mothers were housewives. Moreover, two thirds of the students' families had a monthly income ranged from 200 to 300 pound/month.

Reiner and Suurmerjer (2001) attracted the attention to the early onset of disability as it may be an obstacle against normal way of living. The present study reveals that the majority of students had their first fit since one year to less than 5 years. This result come in accordance with Ramadan's study in 1991which revealed that 78% of his sample had their first fit before the 10^{th} birthday. On the other hand, **Abd Elmonem (1992)** reported that 34.3% of the studied patients experienced their first fit since 10-19 years and 21.1% of them experienced first fit before the 5^{th} birthday. It is so obvious that all these studies indicated the early onset of epileptic seizures, consequently, care for the patients' cognitive and emotional development as well as their social integration is becoming absolutely important.

Complete control of seizures is the main objectives of epilepsy management **(Schmezler & Walash 1999).** In the present study more than one third of third of the studied sample had no fits in the last six months prior to data collection. Only less than one fifth of them had 20.25 or more fits in the last 6 months. This may be explained by the fact that about half of the studied sample asked medical advice at the same

day of the occurrence of the first fit. Similar findings were obtained from the study of **Youssef (1993),** she reported that more than on fourth of the studied sample had no seizures during 6 months and only little percentage (12%) of them had more than 12 seizures during the last 6 months. **Patric and Martin (2002)** also reported that only one fourth of the surveyed patients have been seizures free for the past year, with the remaining 75% experiencing an average of 70 seizures each year. This high seizures' frequency resulting in substantial deleterious effects on individual health and quality of life and also a heavy burden on society.

Kyngas (2001) and many researchers recommended the use of mono therapy and avoidance of multiple drugs combination for epileptics to avoid its multiple side effects. This is in agreement with the result of the present study where most of epileptic students were receiving a single antiepileptic drug. However, the least were using a combination of two or more drugs. Similar results were reported by the study of **Youssef (1993).**

The role of positive family history of epilepsy in the development of the disease was emphasized by **Elmslie et al., (1997).** In the present study, about one fourth of epileptic students reported a similar condition among one or more of their family members. This figure is nearly the same as reported by **Youssef in 1993** (23.2%) and a much lower figure (12.3%) by **Abd Elmoneam (1992).** These results explain the importance of premarital examination and counseling for the prevention and early detection of epileptic cases especially in prospective couples with positive family history of epilepsy.

Epilepsy shares characteristics with other chronic diseases. It can be a life altering condition for the affected persons. It affects life style and daily living activities including, nutrition, sleep, exercise, social relations, safety in addition to scholastic achievement for children **(Ramadan et al., 1991).**

Nutrition during school age and adolescent period has always a major concern of health. Epileptic students have same need and prone to the same nutritional problems as their peers beside the presence of many disease related factors affecting their nutritional status **(schmezler & Walash, 1999).** The present study showed that the majority of the sample was taking insufficient amount of food.

Disturbance in eating behavior can result in a body that is a below or over its ideal weight. In the present study, more than half of students had a normal body weight, only 7.7% were under weight and about one fifth were at risk of over weight or over weight. This result was similar to the findings obtained from the study of **Alberto, Antonno and Mario** done at 2002 on nutritional status, dietary habits, physical activity and

self-perceived body image in preadolescence in Catania. on the other hand, the National Survey of Egyptian Adolescents (1999) revealed that 4% of the Egyptian adolescents were over weight, one tenth were at risk of over weight and less than one fifth of them were stunted **(Ibrahim et al., 1999).** The numbers of students who were over weight or at risk of over weight in the present study may be attributed to the well known preference of junk food, food high in saturated fats, sugar and carbohydrates. So those students are in a massive need for nutritional guidance and counseling.

Healthy eating habits also could be developed during childhood and adolescence however external pressure can influence their food choice and their dietary intake **(King et al, 1996 and Wong& Winkelstein, 1999).** In the present study the majority has 3 meals /day, and almost two thirds of the epileptic students preferred balanced salted food. This may be explained that epileptic students in the present study were advised by their physicians and parents to restrict the intake of certain foods including salted food to avoid its harmful effect on their condition. So, to maintain proper nutrition and develop healthy eating habits, all epileptic students should be adequately educated about principles of good nutrition.

During school age period children usually do not require a nape, but they spend 8 to 9.5 hours in bed, fewer bed time problems occur during these years **(Wong & winkelstien 1999).** On the other hand sleep disorders in general were commonly described in patients with epilepsy as reported by several studies **(Stores, Wigg & Campling, 1998 and Katagal 2001).** It is worth noting that the majority of the students in the present study had normal sleeping pattern, while just more than one third of them had sleeping problems such as interrupted sleep, difficulty to sleep or both of them. This is in agreement with the results of the study done in UK to study sleep disorders and their relation to psychological disturbance in children with epilepsy **(Stores et al., 1998)**

Physical exercises are an important component of a healthy life style. It is well documented that regular physical exercises improve the physical, mental and social well being. It is also associated with enhancing self-esteem, confidence and stress reduction, decreased risk of many diseases and premature death **(Hightower, Carmmon & Minick, 2002).** In contrast the epileptic students in this study tend to live sedentary life and rarely participate in organized physical activities. This may be due to occurrence of seizure, side effect of drugs, unpredictable nature of seizures, or other psychosocial factors **(Hightower et al., 2002).** It was observed that about two thirds of the studied sample did not practice any type of physical exercises. This could be explained by the

fact that more than one third of the students were afraid from the occurrence of seizure, while more than one fourth did not like participation and only 10.5% were not allowed. Nearly similar observations were found in the study done by **Karlotto (1999)** in Norway who studied the relation between epilepsy and physical exercises. He revealed that epileptic patients live hypoactive life because of probably complex factors including isolation, anxiety, overprotection, low self-esteem, or unpredicted nature of seizures and side effects of drugs. Karlotto also added that there is a general tendency not to restrictive attitude toward physical exercise, since in the majority of patients exercises seem to have no adverse effects and in more than one third regular physical exercises may in fact offer moderate seizure protection while in only 10% exercises may act as a seizure precipitates. So this area is one of the most beneficial areas to epileptics and should be emphasized during education and counseling with considerable balance between the risk for participation in exercises including injury and the multiple physical, social, emotional benefits if they practicing exercise.

With respect to safety precautions followed by epileptic students and their families, less than half of students were prevented from high places or staying alone at home. About one fourth were not allowed to walk alone at street while 26.4% were not allowed to pass street alone. On the other hand all students were exposed to sun differently with a mean of 1.63± 0.97 hour/day. The same results were obtained from Youssef's study which revealed that 31.82% of epileptic students were not allowed to stay at home without supervision, also they were not allowed to walk or pass the street alone (35%) and 40% were prevented from sitting or walking on the sun **(Youssef, 1993) .** Moreover, **Seif El Din et al., (1994)** on their study the maternal concept toward epilepsy supported our findings and emphasized that adopting advised safety precautions will help epileptic children to live normal life. These too much restrictions could be a reflection of parents' fear and anxiety related to their children's conditions that considered a sort of over protection which is not recommended. **WHO (1998)** acknowledged that as much as possible, a normal life should be retained for epileptics to minimize their feeling as different persons. It also pointed out that this restriction may hinder epileptics' initiatives and frustrates their natural enthusiasm. So all epileptics and their parent should be informed about kinds of activities which should be encouraged, regulated or restricted and reasons behind such restrictions.

School age and adolescent period is a period of social interaction, peer relation and self identity **(Keen, 2002).** In spite of that, less than half of the students in the present study had a normal relation with their

parents, while the rest of them complain of over protection. Contrasted findings were obtained from study of **Youssef (1993),** which revealed that the majority of the epileptic students had normal relation with their parents while only 8.33% had problems including over protection.

Regarding students-siblings relationship, the present study displayed that the majority of the studied sample had a normal relation with their siblings. This is in agreement with the results of **Youssef (1993).** On the other hand, a study done by **Pal, Chaudhury and Sengupta (2002)** indicated that all epileptic children had a degree of social deficit either girls or boys, usually they had limited peer group. While in the present study the majority of the epileptic students had friends. More than one tenth of them had no friends mainly because friends usually make fun of them, or do not like to contact with them. This may be due to lack of awareness of the school colleagues about the disease or may be the effect of wrong behaviors and social stigma attached to epilepsy.

Many students revealed that there is an almost universal tendency to withdraw the epileptic students from the society **(Youssef, 1993 and Seif El Din et al., 1994).** Although in the present study the majority of the epileptic students were visiting their friends and relatives, and preferred to play with others including school colleagues, siblings, neighbors, relatives or parents.

Regarding student-teacher relation, the present study showed that the majority of students had normal relation with their teachers, while the minority may complain of violence or avoidness.

Reiner and Suurmerjer (2001) noted that epileptic children are educationally vulnerable, even at general school, one in five is falling appreciable behind in work, also it is well established that children with epilepsy have a higher incidence of school under achievement because multiple factors. In the present study, most of the students (63.2%) never failed while 53.1%, 29.6%, 17.3% of the rest of them repeated a grade either once, twice or triple respectively, this come in accordance with different studies which indicating that epileptics are educationally disadvantage **(Seif El Din et al., 1994 and Phillip, 1998).** On the other hand, Philip reported that general school difficulties among epileptics are unlikely simple because they are at average I.O.

It is well known that there is a positive relation between epilepsy and school attendance of patients **(Pal et al., 2002).** In the present study only one fifth of students did not miss a school day a month prior to the interview, while the rest of them missed several days up to more than week at the same period with a mean of 3.73±4.15 days. Higher values

were obtained from the study of **Youssef (1993)** which revealed that less than half of the epileptic students did not miss any school day in a month prior to the interview, while the rest of them missed school days for a week or more. This high absenteeism rate may be due to different factors such as epileptic student may dislike going to school because the recurrent attacks of seizures, different psychosocial problems with his classmates or teachers may also be factor. On the other hand some parents may prevent their children from going school if seizures frequently occur at school or even if their children have just slight discomfort **(Pal et al., 2002).**

Conclusion:

Based upon the results of this study, it could be concluded that epilepsy as a chronic disease interferes with the life style of the epileptic student since it affects different aspects of his life including social, psychological and physical aspects. It could also be concluded that the attitude and perception of the family members, school colleagues, teachers and the community toward epileptic person can help or alter his ability to adopt with his condition and to live normal life as much as possible.

Recommendations:

- The family of epileptic child especially parents should be counseled about different aspects in patients' life.
- Teachers could play a crucial role in creating a healthy educational atmosphere to epileptic students.
- School nurses should be oriented with new advances and techniques concerning care of epileptic patients.
- Health Education and Counseling of the epileptic students should include their pattern of living to enhance their understanding to the problem and promote their adjustment process.
- Emphasis should be placed on prevention of epilepsy such as, encouraging premarital counseling and examination to prospective couples, especially those who have positive family history of epilepsy. Providing proper antenatal, natal and postnatal care to all pregnant women. Enforcing immunization of all children against the common childhood infections diseases.

Table (1): Distribution of the sample according to their general characteristics.

Characteristics of the sample	**NO.**	**%**
Age (years)	n=220	
8-	68	30.9
12-	100	45.5
16-18	52	23.6
Mean ± SD		13.12 ± 2.76
Sex		
Male	123	55.9
Female	97	44.1
Educational level		
Primary	77	35.0
Preparatory	70	31.8
Technical secondary	45	20.5
Secondary	28	12.7
Student living with		
Both parents	198	90.0
Others	22	10.0

Table (2): Distribution of the study sample according to their health history.

Health History	No.	%
Weight	n=220	
Normal weight	118	53.7
At risk of over weight	43	19.5
Over weight	42	19.1
Under weight	17	7.7
Onset of first epileptic fit (years)		
1-	109	49.5
5-	77	35.0
10+	34	15.5
Mean ± SD		5.44 ± 3.52
Date of last epileptic fit (month)		
<1	62	28.2
1-	70	31.8
5 & more	88	40.0
Mean ± SD		6.30 ± 7.56
Number of fits in the last 6 months		
No fits	83	37.7
1-	56	25.5
5-	22	10.0
10 & more	59	26.8
Mean ± SD		7.63 ± 12.67
Onset of asking medical advice (month)		
At the same day of fit		
<1	108	49.1
1-	39	17.7
5 & more	39	17.7
	34	1.4
Mean ± SD		2.51 ± 5.58
Type of Therapy		
Mono Therapy	139	63.2
Poly Therapy	81	36.8
Family History of epilepsy*		
None	166	75.5
Relatives	27	50
Siblings	23	42.6
Parents	8	14.8

** Multiple answers were given*

Table (3): The relation between food consumption pattern and general characteristics of the sample

General characteristics	Food Consumption Pattern				Test
	Sufficient		Insufficient		
	No.	%	No.	%	
Age					
8-	64	32.5	4	17.4	X^2_2=4.149
12-	90	45.7	10	43.5	P= 0.126
16-18 years	43	21.8	9	39.1	
Sex					
Male	105	53.3	18	78.3	X^2= 5.206 *
Female	92	46.7	5	21.7	P= 0.023
Student birth order					
1st	57	28.9	10	43.5	X^2_3= 3.175
2nd	53	26.9	6	26.1	P= 0.365
3rd	44	22.4	5	21.7	
≥4th	43	21.8	2	8.7	
Living with					
Both parents	177	89.8	21	91.3	X^2= 0.049
Others	20	10.2	2	8.7	P= 0.826
Mothers' education					
University	15	7.7	2	8.7	
Secondary	45	23.0	9	39.1	X^2_4= 4.889
Preparatory or primary	21	10.8	0	0.0	P= 0.29
Read and write	51	26.2	5	21.8	
Illiterate	63	32.3	7	30.4	
Mothers' occupation					
Working	42	21.5	8	34.8	X^2= 2.084
House wife	153	78.5	15	65.2	P= 0.149
Monthly family income LE					
> 150-	27	13.7	1	4.3	
150-	36	18.3	4	17.4	X^2_4=5.418
200-	59	29.9	4	17.4	P=0.247
250-	27	13.7	6	26.1	
≥300	48	24.4	8	34.8	

** Significant at P < 0.05*

Table (4): Distribution of the study sample according to their sleeping pattern.

Sleeping pattern	No.	%
Sleeping hours/day	n=220	
< 8	4	1.8
8	204	92.7
> 8	12	5.5
Mean ± SD		8.09 ± 0.55
Taking a nape		
Don't take	109	49.5
<2 hours	51	23.2
≥2 hours	60	27.3
Mean ± SD		0.88 ± 1.99
Sleeping problems		
Interrupted sleep	39	17.7
Difficulty to sleep	32	14.5
Both interrupted and difficult to sleep	16	7.3
No problems	133	60.5

Table (5): Distribution of the study sample according to their practices of physical exercises.

Practice of physical exercises	No.	%
Frequency/week	n=220	
Once	16	18.6
Twice	29	33.7
Triple or more	41	47.7
No practice	134	60.9
Place of exercises*	n=86	
School	35	40.7
Home	26	30.2
Street	23	26.7
Club	17	19.6
Causes of non practice *	n=134	
Avoid any problem	54	40.3
Do not like exercise	38	28.4
No suitable place	28	20.9
No time	23	17.2
Not allowed	14	10.5

* *Multiple answers were given*

Table (6): Distribution of the study sample according to their safety practices carried out by them and their families.

Safety practices	No.	%
Avoid high places	n=220	
No	128	58.2
Yes	92	41.8
Avoid staying alone at home		
No	128	58.2
Yes	92	41.8
Avoid walking alone at street		
No	166	75.5
Yes	54	24.5
Avoid passing street alone		
No	162	73.6
Yes	58	26.4
Sun exposure/hour		
<1	21	9.5
1-	96	43.7
2-	81	36.8
3+	22	10.0
Mean ± SD 1.63 ± 0.97		

Table (7): Distribution of the study sample according to their social relations.

Social Relations	No.	%
Student-parent relation		
Over protection	121	96.0
All request are achieved	4	3.2
Violence	1	0.8
No problems	94	42.7
Student-sibling relation		
Violence	19	51.4
Incongruent with each others	14	37.8
Make fun of them	4	10.8
No problems	183	83.2
Having friends		
Yes	192	87.3
No because	28	12.7
- They make fun of him	7	25
- They don't like to contact with him	4	14.3
- Don't like contact with other	17	60.7
Playing with whom *		
Parents	14	8.5
Relatives	39	23.8
Neighbors	40	24.4
Siblings	56	34.1
School colleagues	88	53.7
Alone	55	25.1
Not applicable	1	0.5
Visiting relatives and friends		
Yes	183	83.2
No because	37	16.8
• Don't like contact with other	29	78.4
• Because of health status	6	16.2
• Others	2	5.4
Student-Teacher relation		
No problems	183	83.2
Violence (emotional + Physical)	27	73.0
Teacher doesn't engage him in school activities	10	27.0

** Multiple answers were given*

Table (8): Distribution of the study sample according to their scholastic achievement.

Scholastic achievement	No.	%
Failing Years		
No	139	63.2
Once	43	53.1
Twice	24	29.6
Triple	14	17.3
Having Rest		
No	122	55.5
Once	48	49
Twice	17	17.3
Triple	33	33.7
Absenteeism in last month		
Not absent	44	20.0
< One week	131	74.4
≥ One week	45	25.6
Mean ± SD 3.73 ± 4.15		

Table (9): The relation between scholastic achievement and general characteristics of the studied sample.

General characteristics	Scholastic achievement				Test
	No failing years		Failing years		
	No.	%	No.	%	
Age					
8-	52	37.4	16	19.7	$X^2_2=8.431^*$
12-	60	43.2	40	49.4	P=0.015
16-18 years	27	19.4	25	30.9	
Sex					
Male	79	56.8	44	54.3	$X^2_1=0.131$
Female	60	43.2	37	45.7	P=0.717
Student birth order					
1st	46	33.1	21	25.9	$X^2_3=11.285$
2nd	44	31.6	15	18.5	* P=0.010
3rd	29	20.9	20	24.7	
≥4th	20	14.4	25	30.9	
Living with					
Both parents	128	92.1	70	86.4	$X^2_1=1.826$
Others	11	7.9	11	13.6	P=0.177
Mothers' education					
University	12	8.8	5	6.2	
Secondary	45	32.8	9	11.1	$X^2_4=15.51^*$
Preparatory or primary	14	10.2	7	8.6	P=0.004
Read and write	30	21.9	25	30.9	
Illiterate	36	26.3	35	43.2	
Mothers' occupation					
Working	37	27.6	15	18.5	$X^2_1=3.098$
House wife	100	73	66	81.5	P=0.078
Monthly family income (pound)					
Less than 150-	17	12.2	10	12.4	
150-	22	15.8	18	22.2	$X^2_4=16.072$
200-	30	21.6	33	40.7	P=0.003
250-	24	17.3	9	11.1	
≥300	46	33.1	11	13.6	

** Significant at P < 0.05*

Table (10): The relation between type of therapy and scholastic achievement of the studied sample.

Type of therapy	Scholastic achievement				Test
	No failing years		Failing years		
	No.	%	No.	%	
Mono therapy	90	69.8	49	53.8	$X^2_1=5.814^*$
Poly therapy	39	30.2	42	46.2	P=0.0159

** Significant at P < 0.05*

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نمط الحياة لأطفال المدارس المصابين بالصرع

مقدمة

يعد مرض الصرع من أكثر الأمراض العصبية غير المعدية أهمية في العالم حيث لا يوجد فرق بين سن أو جنس أو مستوي اجتماعي أو حدود جغرافية.و قد أوضحت الدراسات الوبائية نظرا لأهمية المشكلة فإنها تعتبر من أوليات مشاكل الصحة العامة حيث أن مرض الصرع يصيب علي الأقل ما بين ٤٠-٥٠ مليون شخص في العالم أغلبيتهم يعيشون في الدول النامية. و يمثل مرض الصرع عبئا ثقيلا علي المرضي و عائلاتهم بالإضافة إلي إنها السبب في حدوث صعوبات اقتصادية في الدول النامية و المتقدمة. و علي الأقل فإن خمسين في المائه من حالات الصرع تبدأ في مرحلة الطفولة و المراهقة مما يمنع الطفل من ممارسة حياته بشكل طبيعي و يحد من تكاملة النفسي و الاجتماعي و كذلك مساهمته كفرد فعال في المجتمع.

الهدف من الدراسة

و تهدف الدراسة الحالية إلي تحديد نمط حياة طلبة المدارس المصابين بالصرع و الذين يترددون علي عيادات التأمين الصحي التي تم اختيارها لإجراء الدراسة.

عينة البحث

و قد طبقت هذه الدراسة علي عينة قوامها ٢٢٠ طالب مصابين بنوبة الصرع الكبرى و الذين يترددون علي العيادات النفسية و العصبية الستة بالمنطقة الثانية و الثالثة للتأمين الصحي في الإسكندرية.

أدوات و طرق البحث:

و قد تم إعداد استمارات استبيان لتقييم نمط حياة هؤلاء الطلبة, وكذلك تقييم معلوماتهم عن المرض (التعريف – الإجراءات الأمنية و العلاج). و قد تم جمع بيانات الدراسة خلال الفترة من يوليو ٢٠٠١ إلي إبريل ٢٠٠٢.

نتائج البحث: و قد أسفرت الدراسة عن النتائج الرئيسية التالية:-

- تراوحت أعمار الطلاب بين ٨ إلي ١٨ سنة بمتوسط ١٣,٢ سنة و كان أكثر من نصف العينة من الذكور.

- كان أكثر من ثلث العينة في المدارس الابتدائية و حوالي خمس العينة في المدارس الثانوية الفنية بينما كان أكثر من العشر في المرحلة الثانوية.

- و قد أوضحت الدراسة أن أكثر من نصف العينة يمثلون الطفل الأول أو الثاني بين إخوانهم بينما يمثل الباقون الطفل الثالث أو الرابع أو أكثر.

- كما أوضحت الدراسة أيضا أن أغلبية الطلاب يعيشون مع والديهم بينما يعيش باقي الطلاب أما مع الأم فقط او الأب فقط أو مع الأقارب.

- يتراوح أعمار الآباء بين ٣٢ إلي ٨٥ سنة و متوسط أعمارهم ٤٨,٥٤ سنة بينما يتراوح متوسط أعمار الأمهات ٤٠,٥٤ سنة.

- تبين من الدراسة إن عدد الإباء و الأمهات الأميين أو الذين يستطيعون القراء و الكتابة كان يزيد عن نصف العينة بينما تمثل الأمهات الحاصلات علي دبلوم متوسط أكثر من ربع العينة. كذلك وجد أن نسبة صغيرة من الأمهات و الآباء كانوا حاصلين علي تعليم جامعي.

- و قد أوضحت الدراسة أيضا ان معظم الأمهات كن ربات بيوت و أن معظم الأمهات العاملات كن يمارسن العمل الكتابي. بينما كان ثلث الآباء تقريبا يمارسون العمل الحر و ان ١٤,٩ % منهم لا يعملون أو بالمعاش.

- و قد تبين أن متوسط الدخل الشهري لعائلات الطلاب كان ٢٠٩,٣٦ ± ٧١,٦٢ جنيها و أن معدل الازدحام يتراوح بين شخص إلي ١٢ شخص بمتوسط ٣,٢٥ ± ١,٥٦٣ شخص.
- تبين من الدراسة أن أكثر من نصف الطلاب كانوا في معدل الوزن الطبيعي بينما حوالي خمس العينة كانوا يعانون من زيادة الوزن و أن ٧,٧ % فقط كانوا اقل من الوزن الطبيعي.
- حدثت نوبة الصرع الأولي لنصف الطلاب تقريبا منذ سنة إلي اقل من خمس سنوات بمتوسط ٥,٤٤ ± ٣,٥٢ سنة.
- تبين أيضا أن حوالي ثلث الطلاب أصيبوا بأخر نوبة صرع منذ سنة إلي اقل من خمس سنوات بمتوسط ٦,٣٠ ± ٧,٥٦ شهر. بينما كان متوسط عدد النوبات في الستة شهور الأخيرة ٧,٦٣ ±١٢,٧٦ نوبة و تراوح متوسط فترة العلاج بين ٥٠,٤١ ± ٣٦,٥٥ شهر.

- أوضحت الدراسة أن حوالي نصف العينة طلبت الرعايا الطبية في نفس يوم حدوث أول نوبة صرع بينما طلبت باقي العينة نفس الرعايا في فترة تتراوح بين أقل من شهر إلي أكثر من ١٥ شهر بمتوسط ٢,٥١ ± ٥,٥٨ شهر.

- و قد أظهرت الدراسة أن معظم العينة قد عولجت بنوع واحد من أدوية الصرع بينما باقي العينة عولجت باثنين أو أكثر.
- و قد تبين أيضا أن أغلبية الطلاب كانوا يترددون علي عيادات التأمين الصحي التابعين لها بشكل منتظم بينما باقي العينة لم يكونوا منتظمين لعدة أسباب منها عدم توافر الدواء او صعوبة الوصول للعيادة أو الزحام الشديد بالعيادة.

- تبين عدم وجود تاريخ مرضي للصرع بين أفراد عائلات معظم الطلاب بينما البعض لديهم أباء أو أخوة أو أقارب يعانون من مرض الصرع, كما تبين كذلك أن أغلبية الطلاب (٨٢,٧%) ليس لديهم أي أمراض أخري بينما يعاني الباقون من بعض الأمراض مثل الحمي الروماتيزمية أو الأنيميا أو التبول اللاإرادي.

- قد أوضحت الدراسة أن هناك نقص في المعلومات الطلاب فيما يتعلق بتعريف المرض أو ما يتعلق بإجراءات الأمان الخاصة بهم بينما أظهر الطلاب مستوي أفضل من المعلومات فيما يتعلق بمباديء تناول العلاج.

- قد تبين أن المصدر الأساسي لمعلومات الطلاب عن الصرع هو الطبيب يليه كل من الطبيب و الآباء سويا. بينما ٦,٨% فقط من الطلاب قد حصلوا علي معلوماتهم من الطبيب و الممرضة سويا.

- أظهرت الدراسة أن معظم أفراد العينة كانوا يتناولون الكمية الكافية من الطعام بينما كان باقي أفراد العينة كانوا يتناولون كميات غير كافية خاصة من الخضروات (٩٧,٩%) و الفواكه (٤٨,١%) و كذلك اللحوم (٦٧,٧%). كما تبين أيضا أن معظم الطلاب يتناولون ٣ وجبات يوميا بينما يتناول الباقون وجبتين فقط أو أكثر من ٣ وجبات يوميا.

- معظم الطلاب كانوا يفضلون تناول الطعام المتوازن في كمية الملح بينما ٨,٦% فقط يفضلون الطعام الذي يحتوي علي كمية كبيرة من الملح و كان معظمهم أيضا يتجنبون المنبهات مثل الشاي و القهوة و غيرها من المشروبات المنبهة كما أمر الطبيب.

- أسفرت نتائج الدراسة علي أن معظم الطلاب كانوا لا يعانون من أي مشاكل في النوم و كانوا يتمتعون بنوم طبيعي بينما الباقي من الطلاب يعانون من النوم المتقطع أو صعوبة النوم أو الاثنين معا.

- كان متوسط عدد مرات الاستحمام في الأسبوع ١,٦٥ مرة في الشتاء, بينما ٣,٦١ مرة في الصيف و كان أغلبية الطلاب معتمدين علي الغير في الاستحمام خاصة الأم.

- كما تبين من الدراسة أن ربع العينة لا يقومون بغسيل الأسنان علي الإطلاق بينما متوسط عدد مرات غسيل الأسنان للطلاب الباقيين كان ١,١٧ مرة في اليوم.

- أوضحت الدراسة أن أكثر من نصف العينة لا يمارسون أي نوع من التمرينات الرياضية أما بسبب خوفهم من حدوث نوبة الصرع أو إنهم لا يحبون التمرينات أو لأنة لا يوجد وقت و لا مكان متاح لممارسة التمرينات الرياضية أو لان الوالدين لا يسمحان بممارستها. بينما كان بقية العينة يمارسون التمرينات من مرة الي ثلاث مرات أو أكثر في الأسبوع.

- تبين من الدراسة أن كل الطلاب كانوا يشاركون في أنشطة ترفيهية مختلفة باستثناء طالب واحد فقط لا يحب المشاركة في إي نشاط.
- كما تبين أيضا أن معظم الطلاب كانوا يشاركون في الأنشطة المنزلية المختلفة ما عدا ٢٥% منهم لأنهم لا يحبون الأنشطة المنزلية أو لأنهم غير مسموح لهم بالمشاركة فيها.
- متوسط فترة مشاهدة التليفزيون كان ٢,٤٤ ±١,٨٦ ساعة في اليوم بينما كان متوسط عدد ساعات ممارسة ألعاب الفيديو و الكمبيوتر أو الآتاري ٠,٣٨ ± ٠,٨٢ ساعة في اليوم.

- فيما يتعلق بالأنشطة خارج المنزل, وجد أن أقل من نصف العينة كانوا يلعبون كـرة القدم أما في الشارع أو المدرسة أو النادي كما أن معظم الطـلاب كـانوا يقومـون بالسباحة تحت إشراف الوالدين أو الأقارب بينما ٢٤,٤% منهم كانوا يقومون بالسباحة بدون إشراف. كما تبين كذلك أن اقل من النصف عدد العينة كانوا يمارسون ركـوب الدراجات أما في الشارع أو النادي أو المدرسة.

- و تبين من الدراسة أن اقل من ثلثي العينة لا يشاركون في أي نشاط مدرسـي أمـا لأنهم لا يحبون تلك الأنشطة أو إن مدارسهم تفتقر لهذه الأنشطة أو في بعض الأحيان لان هؤلاء الطلاب ممنوعون من المشاركة في هذه الأنشطة
- أظهرت الدراسة أن أقل من ثلثي العينة لم يسبق لهم الرسوب بينما باقي العينـة قـد رسبوا مرة أو اثنان أو ثلاث مرات.

- و فيما يتعلق بغياب الطلاب عن المدرسة. قد تبين أن خمس العينة لم يتغيبوا عن المدرسة في الشهر السابق للمقابلة بينما باقي العينة قد تغيبوا أقل من أسبوع الي أسبوع أو أكثر في نفس الفترة بمتوسط ٣,٧٣ $\pm$ ٤,١٥ يوميا.

- و قد أشارت الدراسة أيضا ان هناك نقص في المعلومات الطلاب المصابين بالصرع عن المرض و طبيعته و إجراءات الآمان و كذلك قواعد تناول العلاج.

التوصيات: و بناءا علي ذلك فقد أوصت الدراسة بما يلي:-

- يجب أن يتم إمداد المجتمع بالمعلومات الكافية عن مرض الصرع و طبيعته و أسبابة و طرق تشخيصه و كذلك العلاج المتوافر و ذلك من أجل القضاء علـي المعتقـدات الخاطئة و التي تعد واحدة من أهم مصادر معانـاة و مـشاكل مـرضى الـصرع.

- يجب أن يمد كل من المرضي و آبائهم بالمعلومات الكافية و الدقيقة عن المرض و أهمية الاكتشاف المبكر و العلاج و المتابعة.

- يمكن أن يلعب المدرسون و زملاء المدرسة دورا ايجابيا في المساندة و العناية بالطفل المصاب بالصرع إذا كان قد تم إمدادهم و تدريبهم علي مختلف الاحتياجات و المشاكل التي يعاني منها هؤلاء الطلاب.

- كل أفراد الفريق الصحي و خاصة الممرضات يجب أن يحـاطوا و يـدربوا بـشكل دوري و منتظم علي كل ما هو جديد في العناية بمريض الصرع لكي يكونوا مصدر المعلومات الفعال للمرضي و عائلاتهم.

Comparison of breast Feeding Perceptions and Practice and Associated Problems among Caesarean Section and Normal Vaginal Delivery Women

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Abstract

Background Breastfeeding as soon as possible after birth has advantages for mothers who have had cesareans just as it does for mothers who deliver vaginally. The influence that the mode of delivery has on lactation rates is under debate. **Aim**: To identify the effect of cesarean section delivery on encountered maternal and neonatal breastfeeding problems over the first week after birth through comparison with normal vaginal delivery. **Subjects & Methods:** A comparative research design was used on 50 cesarean section (CS) women and 50 normal vaginal delivery (NVD) ones in the postnatal ward at the University Maternity Hospital in Tripoli, Libya. An interviewing form was used to collect socio-demographic data and mother's perceptions and misconceptions related to breastfeeding, and an assessment checklist for practices and maternal and fetal complications. **Results:** About half of both groups were illiterate. Significantly more women in the NVD group thought that colostrums was concentrated breast milk (p=0.002), while more CS women believed it was stale milk (p=0.012). They had lower misconception of toxicity of breastfeeding after anesthesia (p=0.029), and higher misconception of baby need of herbal drink to relieve colic (p=0.001). Mothers of woman were the most common source of information. CS women had significantly more delayed initiation (p<0.001), and more deficient practice regarding frequency (p<0.001) and duration (p<0.001). NVD women had significantly less breast (p=0.003), neonatal (p=0.012), and initiation and practice (p<0.001) problems. The majority of women in both groups expressed their preference for breastfeeding. **Conclusion & Recommendations:** Breastfeeding problems during the first week of life may be common, especially after CS, which are associated with lack of knowledge, misconceptions, and deficient practice. It is recommended that physicians and nurses should make more effort in guidance, support, and management of problems related to breastfeeding. The circulating nurse should be responsible for initiating breastfeeding in the operating theater after cesarean section.

Keywords: Breastfeeding, Cesarean section, Misconceptions

Introduction

Breastfeeding has long been recognized as one of the most important contributors to infant health. New and continuing researches are increasing our understanding that the absence of breastfeeding is a

significant public health issue, and is associated with excess risk of morbidity and mortality in infants, children and in women. Breast milk is widely accepted as the ideal source of nutrition for infants **(Kinsley et al, 2000)**. In order to ensure success in breastfeeding, it is important that it be initiated as early as possible during the neonatal period **(Dixon, 1994)**.

Breastfeeding as soon as possible after birth has advantages for mothers who have had cesareans just as it does for mothers who deliver vaginally. It promotes bonding, provides stimulation to bring the milk in sooner, releases the hormone oxytocin to help the uterus contract, provides the baby with the immunological advantages of colostrums, and takes advantage of the fact that the newborn's sucking urge is strongest in the first couple of hours after birth **(Featherstone, 1997; Foxman et al, 2002)**.

Cesarean birth was introduced in obstetrics as an alternative to vaginal delivery to reduce the risk to the mothers and the fetus in specific circumstances. Therefore, it is a good idea for the expectant mother who has to cope with having a cesarean section to also try to care for her coming newborn by preparing herself for breastfeeding baby before his/her arrival **(Fulton, 2005; Featherstone, 2006)**.

An operative birth versus a vaginal birth can affect the breastfeeding experience in several ways. Initiation of breastfeeding is often delayed, because mothers who have delivered via cesarean section often need some extra time to recover before they physically feel like holding and nursing their newborn. As soon as they are fully conscious and alert and able to hold the baby, they can begin breastfeeding **(Featherstone, 1997)**.

On the other hand, babies born by cesarean section may be somewhat drowsy and lethargic, especially if the mother was exposed to anesthetics for a prolonged period of time during labor. This does not mean that breastfeeding will not be successful, but it can mean that the milk may take a little longer time to come in than it would after a vaginal birth. Therefore, the baby may need some extra encouragement and stimulation in order to stay alert during feedings, but this period of lethargy generally only lasts a short time **(Johnson and Pluckier, 1994; Gillespie et al., 2002)**.

The influence that the mode of delivery has on lactation rates is likewise under debate. Thus, some studies could not show any effect. For instance, a study conducted in 2005 found no statistically difference in breastfeeding rates at day four, but did find a delay in the time at which women reported their milk “coming in.” There also was an increased use

of formula in the first four days (**Kathryn et al., 2003)**. Hence, the previously mentioned confounding factors can come into play, and lead to delay of initiation. In another study that did not show a difference between cesarean and normal delivery, the overall breastfeeding was very high; only 2.2% of women with spontaneous vaginal deliveries and 3.6% of women with others forms of delivery were bottle-feeding **(The Academy of Breastfeeding Medicine, 2002)**. Meanwhile, other authors reported decreased breastfeeding rates after cesarean delivery **(Mothers Survey, 2003**).

The first 24 hours of a baby's life are crucial to a positive breastfeeding experience for both the mother and the baby. Whether delivered vaginally or by Caesarean section, putting the baby to the breast as soon as possible after delivery is essential **(Margaret et al., 2007)**. Additionally, the first week after delivery is a critical time to help new mothers, because many women stop breastfeeding as soon as problems arise. Early signs of breastfeeding problems include poor infant breastfeeding behavior as a delay in rooting and abnormal suckling behavior as inadequate arousal, rooting, and latching on, as well as delayed onset of milk production, and excess infant weight loss **(Kaufmann and Forman, 2003; Kist et al, 2008)**.

Therefore, the first feeding after cesarean birth should be encouraged as soon as possible after delivery, preferably within the first hour, depending on the type of anesthesia given and surrounding circumstances **(Marshall et al., 2005)**. Whenever possible, the infant should be allowed to root and latch on spontaneously within the first hour of life. Many common nursery routines such as weighing the infant, administration of vitamin K and application of ocular antibiotics can be safely delayed until after the initial breastfeeding **(The Academy of Breastfeeding Medicine, 2002)**.

If the mother knows that she will be delivering by cesarean section, she can make choices in advance before birth that will facilitate breastfeeding. She can choose a hospital that has policies supportive of breastfeeding, such as not routinely giving bottles and allowing rooming in. She should find out how much time she and her baby will be allowed to spend together. As extra help will be needed in caring for the baby, it is better to arrange for a family member to stay with the mother **(Royal Women's Hospital Melbourne, 1999; NHS Direct Mastitis, 2000)**. This might decrease the chance of resorting to bottle-feeding for ease. The family member may assist with burping, bathing, and assessing the infant's latch at the breast. If the infant must be separated from the mother after cesarean delivery because of prematurely or illness, the mother

should be instructed to pump the breasts at the same times she would normally be breastfeeding her infant **(MDH, 2004)**.

Health care providers, and particularly nurses, after cesarean birth have to be able to identify mothers and babies that may need extra breastfeeding support and advice soon after delivery **(World Health Organization, 2000)**. The nurse may demonstrate nursing positions that minimize contact with the incision, and reassure the mother that these difficulties are temporary. She has also to instruct the mothers that they should breastfeed at least 8 times in 24 hours, and that they can successfully breastfeed regardless of method of delivery **(Mothers Survey, 2003)**. Also, the nurse can offer help to women with breastfeeding problems after a cesarean with information and resources to help them overcome the difficulties they might be having **(MDH, 2004; American Academy of Pediatrics. 2007)**.

This work ultimately emphasizes the need to identify problems that encountered mothers with breastfeeding over the first week of life to form an essential base for health education to raise the awareness of the women regarding the importance of practice of breastfeeding immediately after delivery to prevent associated problems. The expected findings can help the nurses in identification and best management of breastfeeding problems, especially after cesarean section, and in avoidance of formula supplementation.

Aim of the study:

The aim of this study is to identify the effect of cesarean section delivery on encountered maternal and neonatal breastfeeding problems over the first week after birth through comparison with normal vaginal delivery.

Subjects & Methods:

Design: This study was carried out using a comparative research design.

Setting:

The study was conducted at postnatal ward affiliated to Tripoli medical center at the University Maternity Hospital in Tripoli, Libya.

Subjects:

The study was conducted on 100 healthy nursing primiparous mothers who were delivered at the study setting, and their babies. They consisted of two equal groups:

- Cesarean section group: 50 primiparous mothers delivered by caesarean section
- Normal delivery group: 50 primiparas mothers who had a normal vaginal delivery.

Mothers of both groups were recruited according to the following criteria:

- **Inclusion criteria**:
  - Primiparity
  - Singleton pregnancy, cephalic presentation with no congenital anomalies
  - Full-term baby, 2800 gm or more, not separated at NICU
  - Exclusively breastfeeding during the course of the study
  - Willing to participate in the study and able to give informed consent.
- **Exclusion criterion**:
  - Unstable maternal medical or psychological state.

Tools

An interviewing form was designed by the researchers to collect data related to mother socio-demographic characteristics as age, education, job status, residence, and smoking. The tool assessed mother's perceptions of the advantages of breastfeeding and the colostrums, and related misconceptions and the sources of information.

An assessment checklist was constructed for recording maternal practices related to breastfeeding and the complications. It assessed the practice of breastfeeding regarding initiation, frequency, and duration over the first week of newborn life. Maternal and fetal complications were also assessed and documented during the same period.

Pilot study

Ten mothers admitted to postnatal ward, five with normal vaginal delivery and five with cesarean section delivery were included in the pilot. They were interviewed to assess form feasibility and clarity. The time required for each woman' interviewing ranged between 30 and 45 minutes. Necessary modifications were done in the tool accordingly,

mostly rewording and rephrasing some items. This pilot sample was excluded from the main study sample.

Methods

An official letter from the High Institute of Nursing in Al-Korapolly Tripoli, Libya was directed to the responsible authority at the study setting to take the permission to conduct the study, explaining its purpose and methodology. Development of the study tool was done by the researchers after reviewing the relevant literature. The purpose of the study was explained by the researcher to the potential study participants to obtain their written consent to participate in the study. They were informed about their rights.

Then, the researchers interviewed and assessed the mothers and newborns. With the help of all nursery midwives, mothers practices and any maternal of newborn problems related to breastfeeding practice were recorded in the assessment checklist. This was done over the first week of newborn's life whether at the nursery or at home. The mothers were interviewed again after discharge on the 7^{th} day during follow-up visit.

Statistical analysis

Data entry and analysis were done using Epi-Info 6.04 computer software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. Statistical significance was considered at p-value <0.05.

Results:

The socio-demographic characteristics of women in the two studied groups are described in **Table (1)** they had a similar age distribution, with most of them aged 30 years or older. The mean age was slightly higher among cesarean section women, compared to normal vaginal delivery group, 33.0±5.0 and 29.4±5.2 years respectively, but with no statistically significant difference. About half of both samples were illiterate, 48% and 52%, respectively. Concerning occupation, it was found that the majority of cesarean group (72%) were housewives, compared to 42% of the other group, and the difference was statistically significant (p=0.002). Similarly, the majority of cesarean group (74%) had urban residence, compared to 44% of the other group, and the

difference was statistically significant (p=0.009). Very few women in the two groups were smoking.

Table (2) presents women's perceptions related to colostrums, advantages of breastfeeding, and related misconceptions. Significantly more women in the normal delivery group thought that colostrums was concentrated breast milk (p=0.002). Conversely, more women in the cesarean group believed that colostrums was stale milk, and the difference was the statistically significant (p=0.012). Concerning the advantages of breastfeeding, one-half of both groups knew it was nutritive and clean. Meanwhile, statistically significantly more women in the normal delivery group knew about its immunological role in protection of the baby (p=0.029).

As regards maternal misconceptions related to breastfeeding, the same table points to statistically significant differences regarding toxicity of breastfeeding after anesthesia (p=0.029), and baby need of herbal drink to relieve colic (p=0.001). The first misconception was higher among women in the normal delivery group, while the second one was higher among women in the cesarean group. Only very few women in the two groups had the misconception that breastfeeding could disfigure the breasts.

Figure (1) illustrates the various sources of information about breastfeeding as reported by women in the two groups. The most commonly mentioned source in both groups was the mother of the woman, 40% and 30% in the cesarean and normal delivery groups, respectively. Health personnel were more reported by women in the cesarean group (20%), compared to the normal delivery group (10%) as sources of information. Mass media were mentioned by 14% and 20% of the women, respectively. However, no statistically significant difference could be revealed between the two groups regarding their sources of information.

Table (3) demonstrates the practice of breastfeeding among women in the two groups. It indicates a delay in the initiation of breastfeeding in the cesarean group, while 80% of the mothers in the other group started it immediately, and the difference was statistically significant (p<0.001). Also, regarding the frequency of breastfeeding, only 40% of women in the cesarean group practiced on demand, compared to 80% of those in the vaginal delivery group, and the difference was statistically significant (p<0.001). As for the duration of each breast feed, the table indicates a statistically significant (p<0.001), where in most of the cesarean group women (74%) it was less than five

minutes, whereas in 90% of the women in the normal delivery group it was more than ten minutes. Although the majority of women in both groups expressed their preference for breastfeeding, 70% and 90% respectively, the difference was statistically significant (p=0.044), with a higher preference among normal delivery group women.

The incidence of various maternal and neonatal problems related to breastfeeding in the two study groups is presented in **Table (4)** The table indicates that there is statistically significance more among the normal delivery group of women who had no breast problems (p=0.003), no neonatal problems (p=0.012), or problems related to initiation and practice of breast feeding (p<0.001). The most common breast problem was engorgement and tenderness breast, and it was significantly higher among women in the cesarean group (p=0.029). Sleepy baby was the most commonly reported neonatal problem, and it was also statistically significantly higher in the cesarean group (p=0.037). As regards the problems related to initiation and practice of breastfeeding, they were all higher among cesarean group women, with statistically significant differences regarding pain and weakness (p=0.005), and disorientation after anesthesia (p<0.001).

Discussion:

Breastfeeding difficulties in the early postpartum period, especially if combined with inadequate support and advice, may lead new mothers to give up breastfeeding **(Featherstone, 2006)**. Many factors can influence the establishment of breastfeeding. One of the most important of these factors is the type of labor, especially caesarean section which may be associated with difficulty establishing breastfeeding during the first week after delivery **(Johnson and Pluckier, 1994)**. However, the effect of mode of delivery on lactation rates is under debate. Therefore, the present study was aimed at investigating differences in breastfeeding in normal vaginal delivery and cesarean delivery.

The present study was carried out on two groups of the middle class of the Libyan society. They had similar age and education as these parameters may influence the decision to start and continue breastfeeding. In fact education is associated with a more health seeking behavior **(World Health Organization, 2000)**, and educated women usually are more likely to have better access to community health services which provide proper preparation, education and care during postnatal periods **(Declerca et al ., 2oo8)**.

However, more women in the cesarean section group were housewives, and of urban residence. These two factors could have inverse

effects on breastfeeding, where non-working mothers would have more preference to breastfeeding, while breastfeeding is known to be less practiced in urban compared to rural areas. Therefore, the effect of these two factors might be counteracted.

According to the present study findings, most of the mothers in the two groups did not recognize clearly the difference between colostrums and natural breast milk, where half of them thought that the significance of colostrum was related to its concentration and thickness. The misconception of considering colostrum as stale milk that should be discarded was more among the cesarean group women. They had also low knowledge about the immunological benefits of breastfeeding, especially among cesarean group women. These results are expected and reflect low level of health awareness and knowledge, which might be explained by the high percentage of illiteracy in the two study groups, which reached about 50%. The finding are in agreement with **Kist et al (2008)** who reported that new mothers who are inexperienced may encounter some difficulties in breast feeding due to lack of knowledge and experience.

Breastfeeding misconceptions were also revealed in the present study, especially the one related to toxicity of breast milk after cesarean. This misconception was higher among the normal delivery women. The difference might be explained by that women in the cesarean group are usually more close to health care providers, and should have asked specifically about this issue, and thus got the correct information about it.

Another misconception related to breastfeeding, as revealed in the present study, was that baby needs herbal drink for the relief of colic. This misconception was noticed to be statistically significantly higher among cesarean group women. It might be related to other misconceptions regarding the toxicity of medications given to the mother on the baby, and the insufficiency of breast milk. This would lead to lower rates of exclusive breastfeeding among cesarean women during the first week of infant life. In agreement with this, a study revealed that women who underwent cesarean delivery were one half as likely to breastfeed exclusively during their hospital stay **(Mecca et al., 2007)**.

The high prevalence of misconceptions related to breastfeeding could also be attributed to the sources of information reported by studied women. The study findings indicated that women's mothers were the most common sources of information, in addition to dayas and auxiliary workers, while the share of the health personnel was very low. This points to the importance of the role of health care providers, especially

nurses, in raising the awareness of these women about breastfeeding, and in correcting their misconceptions.

As regards initiation of breastfeeding, the present found an unacceptable delay in initiating the first infant-breast contact, especially in the cesarean section group where most of them delayed it up to 24 hours, and about one-fourth delayed it to the following day. Although the woman can have a role in this delay, it is thought that this might be a system problem. In fact, women delivered by cesarean section, being hospitalized, are obliged to follow the rules of the hospital regarding initiation of breastfeeding and rooming it. In this respect, it has been shown that early skin-to-skin contact improves maternal infant bonding. Furthermore, infants who have early maternal contact have been found to nurse more effectively at the first feeding and, in some cases, if the baby is left alone on the mother's chest, it has crawled spontaneously to the breast and suckled **(Kist et al., 2008)**.

In the same respect, it has been claimed that the newborn's sucking urge is strongest in the first couple of hours after birth **(WHO, 2000)**. Therefore, women should take advantage of this period by early initiation of breastfeeding. Moreover, cesarean section mothers might have an extra advantage during the brief period of time before the regional anesthetic wears off. This provides a pain-free time for more comfortable nursing during the baby's first feedings at the breast. So, there is no reason that these mothers cannot nurse practice early initiation of breastfeeding, and feed their babies successfully **(The Academy of Breastfeeding Medicine, 2002)**.

Meanwhile, other unmeasured but potentially confounding variables such as the effects of maternal preoperative stress, degree of hydration, blood loss, mobility score, anesthesia, hospitalization as a source of family disruption, disappointed due to baby sex and postoperative analgesia, could have a negative impact on maternal lactation and infant suckling. This is in congruence with **Marshall et al (2005)** who mentioned that initiation of breastfeeding was often delayed because mothers who have delivered by cesarean section often need some extra time to recover before they physically feel like holding and nursing their new baby. Also, some of these mothers are worried that the medications prescribed for them after delivery will adversely affect their babies **(Kist et al., 2008)**.

The present study findings have also demonstrated that the practice of women in the cesarean section group was more deficient regarding the frequency and duration of breastfeeding. The highest percentages were

not practicing on-demand feeding, and breast fed their babies for less than five minutes per fed. These findings could certainly be attributed to mother condition after the surgery. Positioning may be more difficult because of postoperative pain, and thus the nurse should instruct the woman in using the lateral decubitus position, and pillows may also be used to provide support for the area of incision **(Declerca et al., 2008)**. Weakness and disorientation after anesthesia could also interfere with the initiation of breastfeeding, and with the proper practice regarding frequency an duration **(Mothers Survey, 2003)**.

Furthermore, all types of breast and neonatal problems were more common among cesarean section women. The problem of breast engorgement and tenderness could be secondary to deficient practice among them. This is in congruence with **(Lydon et al .,2001)** who reported that breast engorgement is due to an over production of milk, and is caused by a inadequate, infrequent or missed feeding, and relieved by rooming-in, early initiation of breastfeeding immediately after birth, besides regular nursing, which is considered the best preventive measure.

On the other hand, the problem of sleepy baby, which was more common among women in the cesarean section group, might be related to the operation and related anesthesia and medications. The finding is in a line with **Dixon (1994)** who reported that babies born via cesarean section might be somewhat drowsy and lethargic, especially if the mother was exposed to anesthetics for a prolonged period of time during labor. However, this does not mean that breastfeeding will not be successful, but it can mean that the milk may take a little longer to come in than it would after a vaginal birth. The baby may just need some extra encouragement and stimulation in order to stay alert during feedings, and this period of lethargy generally only lasts a short time **(MDH, 2004)**.

Despite all these misconceptions and problems, the majority of the present study women, in the two groups, reported their preference of breastfeeding. This might be explained by the study population and setting, which is a middle class society, where breastfeeding is considered as one of the most important roles of mothers in community values and traditions. Additionally, many of these women recognized the basic benefits of breastfeeding, which have been documented both as physical **(Kaufmann and Forman, 2003)** and emotional and psychological benefits **(NHS Direct Mastitis, 2000)**. The finding is in line with a study conducted in 2005, which reported very high overall breastfeeding rates among women with spontaneous vaginal deliveries and those women with cesarean section **(Mecca et al., 2007)**.Therefore, in patient

committed to breastfeeding, the potential obstacles related to operative delivery can be overcome.

Conclusion and recommendations:

It can be concluded from the results of this study that breastfeeding problems during the first week of life may be common, especially after caesarean section delivery. Many of these could be attributed to lack of knowledge, misconceptions, and subsequent deficient practice. The role of health care providers as sources of information about breastfeeding also turned to be deficient. Nonetheless, the majority of women expressed their preference of breastfeeding.

Based on these findings, it is recommended that physicians and nurses should make more effort in guidance, support, and management of problems related to breastfeeding. The circulating nurse should be responsible for initiating breastfeeding in the operating theater after cesarean section. The use of pain medication might help nursing mothers after cesarean section. These women should also be instructed about comfortable positions. The practice of rooming-in and allowing a family member to stay with the mother after cesarean may also help to increase the breastfeeding success rate.

Table (1): Socio-demographic characteristics of women in the two study groups

Items	Groups				X^2 test	p-value
	Cesarean (n=50)		Normal vaginal (n=50)			
	No.	%	No.	%		
Age (years):						
20-	5	10.0	12	24.0		
25-	5	10.0	10	20.0		
30-	15	30.0	20	40.0	6.68	0.08
35-39	25	50.0	8	16.0		
Mean ± SD	33 ± 4.95		29.4 ± 5.2			
Education:						
Illiterate	24	48.0	26	52.0		
Read and write	14	28.0	12	24.0	2.98	0.40
Primary/preparatory	7	14.0	3	6.0		
Secondary/university	5	10.0	9	18.0		
Job status:						
Housewife	36	72.0	21	42.0		
Working	14	28.0	29	58.0	9.18	0.002*
Residence:						
Urban	35	70.0	22	44.0		
Rural	15	30.0	28	56.0	6.90	0.009*
Smoking status:						
Yes	4	8.0	2	4.0		
No	46	92.0	48	96.0	Fisher	0.68

(*) Statistically significant at p<0.05

Table (2): Perceptions and misconceptions related to breastfeeding among women in the two study groups

Items	Groups				X^2 test	p-value
	Cesarean (n=50)		Normal vaginal (n=50)			
	No.	%	No.	%		
Colostrums:						
More concentrated than breast milk	25	50.0	40	80.0	9.89	0.002*
Unhealthy stale milk	15	30.0	5	10.0	6.25	0.012*
No difference from breast milk	10	20.0	5	10.0	1.96	0.161
Advantages of breastfeeding:[@]						
Natural, nutritive and clean	25	50.0	25	50.0	--	--
Immunological protection for baby	10	20.0	20	40.0	4.76	0.029*
Satisfy need for mothering	17	34.0	15	30.0	0.18	0.67
Breast feeding misconceptions:						
Breastfeeding after anesthesia is toxic	10	20.0	20	40.0	4.76	0.029*
Worry about future fertility and breastfeeding	12	24.0	10	20.0	0.23	0.63
Breast feeding disfigures breast	4	8.0	4	8.0	--	--
Baby need herbal drink to relief colic	20	40.0	6	12.0	10.19	0.001*
Breastfeeding increase or decrease body weight	4	8.0	10	20.0	2.99	0.084

(@) Not mutually exclusive *(*) statistically significant at p<0.05*

Figure (1): Source of information about breastfeeding as reported by women in the two study groups

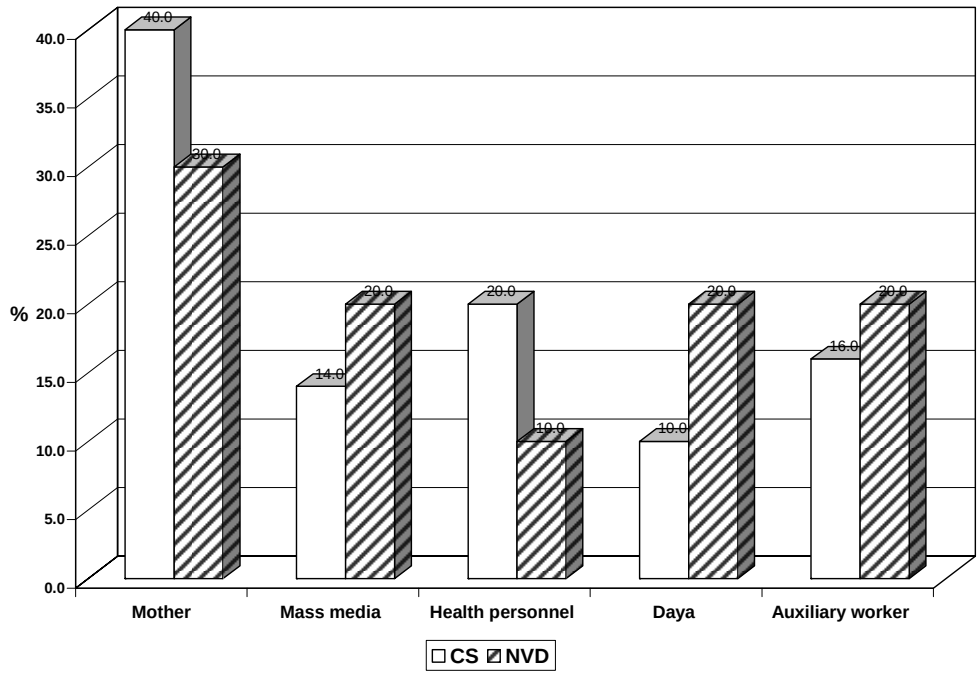

Table (3): Practice of breastfeeding by women in the two study groups

Items	Groups				X^2 test	p-value
	Cesarean (n=50)		Normal vaginal (n=50)			
	No.	%	No.	%		
Initiation of breastfeeding:						
Immediately	0	0.0	40	80.0		
6 to 24 hrs	38	76.0	10	20.0	68.33	<0.001*
More than 24 to 48 hrs	12	24.0	0	0.0		
Frequency:						
On demand	20	40.0	40	80.0		
Less than 6 times per day	5	10.0	1	2.0	16.86	<0.001*
6 or more times per day	25	50.0	9	18.0		
Duration:						
Less than 5 minute	37	74.0	0	0.0		
5 to 10 minute	10	20.0	5	10.0	75.42	<0.001*
More than 10 minute	3	6.0	45	90.0		
Preference:						
Breastfeeding	35	70.0	45	90.0		
Artificial feeding	12	24.0	5	10.0	4.04@	0.044*
Any	3	6.0	0	0.0		

(*) Statistically significant at p<0.05 (@) Test between breastfeeding and artificial feeding

Table (4): Maternal and neonatal problems related to breastfeeding among women in the two study groups

Items	Groups				X^2 test	p-value
	Cesarean (n=50)		Normal vaginal (n=50)			
	No.	%	No.	%		
Breast problems:						
No problems	15	30.0	30	60.0	9.09	0.003*
Engorged and tender breast	20	40.0	10	20.0	4.76	0.029*
Cracked and inflamed nipple	11	22.0	5	10.0	2.68	0.10
Inverted nipple	4	8.0	5	10.0	Fisher	1.00
Neonatal problems:						
No problems	35	70.0	45	90.0	6.25	0.012*
Sleepy baby	10	20.0	3	6.0	4.33	0.037*
Refused to suckle	1	2.0	0	0.0	Fisher	1.00
Chest infection	4	8.0	2	4.0	Fisher	0.68
Problems related to initiation and practice of breastfeeding:						
No problems	20	40.0	46	92.0	30.12	<0.001*
Unable to mothering her baby due to pain and weakness	15	30.0	4	8.0	7.86	0.005*
Disorientation after anesthesia	10	20.0	0	0.0	11.11	<0.001*
Hospitalization as a source of family disruption	5	10.0	0	0.0	Fisher	0.056

(*) Statistically significant at p<0.05

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مقارنة المفاهيم والممارسات المتعلقة بالرضاعة الطبيعية والمشاكل المصاحبة لها بين السيدات اللواتي ولدن ولادة طبيعية واللواتي ولدن بعملية قيصرية

المقدمة

إن الرضاعة الطبيعية مباشرة بعد الولادة لها فوائد بالنسبة للأمهات اللواتي ولدن بعملية قيصرية تماما مثل اللواتي ولدن ولادة طبيعية. إلا أن تأثير طريقة الولادة على الرضاعة الطبيعية مازال غير متفق عليه في الأبحاث العلمية.

هدف البحث

يهدف هذا البحث إلى تحديد تأثير الولادة القيصرية على حدوث مشاكل الرضاعة الطبيعية لدى الأم والطفل الوليد خلال الأسبوع الأول بعد الولادة، مقارنة بالولادة المهبلية الطبيعية.

طرق وأدوات البحث

التصميم البحثي: دراسة تحليلية مقارنة.

مكان الدراسة: قسم ما بعد الولادة بمستشفى النسا والتوليد الجامعي بطرابلس، ليبيا.

عينة الدراسة: اشتملت العينة مجموعتين من السيدات اللواتي تم توليدهن بمكان البحث:

- مجموعة الدراسة: ٥٠ سيدة ولدن بعملية قيصرية
- مجموعة ضابطة: ٥٠ سيدة ولدن ولادة مهبلية طبيعية.

أدوات جمع البيانات: تم جمع بيانات الدراسة بواسطة:

١- استمارة مقابلة احتوت على الأجزاء التالية:

- البيانات الديموجرافية للسيدة
- أسئلة المفاهيم والمعتقدات المرتبطة بالرضاعة الطبيعية

٢- قائمة تحقق لتدوين ممارسات السيدة المتعلقة بالرضاعة الطبيعية والمشاكل لدى الأم والطفل الوليد خلال الأسبوع الأول بعد الولادة

النتائج : أظهرت النتائج ما يلي:

- حوالي نصف السيدات في كل من المجموعتين كن أميات
- تبين أن نسبة أكبر من السيدات في مجموعة الولادة الطبيعية تعتقدن أن لبن السرسوب هو لبن عادي ولكن تركيزه أكبر، بينما كانت نسبة السيدات اللواتي

تعتقدن أن لبن السرسوب هو لبن فاسد أعلى في مجموعة الولادة القيصرية، وكانت الفروق ذات دلالة إحصائية.

- أظهرت النتائج أن نسبة السيدات اللواتي تعتقدن أن التخدير له تأثير ضار على الرضاعة الطبيعية أقل في مجموعة الولادة القيصرية، وكان الفارق ذا دلالة إحصائية.
- أيضا كانت نسبة السيدات اللواتي تعتقدن أنه يجب إعطاء الطفل الوليد سوائل أعشاب لعلاج المغص أعلى في مجموعة الولادة القيصرية، وكان الفارق ذا دلالة إحصائية.
- كانت الأم هي المصدر الرئيسي للمعلومات عن الرضاعة الطبيعية لدى السيدات في مجموعتي الدراسة.
- كما بينت النتائج أن التأخر في بدء الرضاعة الطبيعية والممارسات الخاطئة بالنسبة لعدد المرات والمدة كانت أعلى في مجموعة الولادة القيصرية، وكانت الفروق ذات دلالة إحصائية.
- أيضا تبين أن نسبة حدوث مشاكل متعلقة بالرضاعة الطبيعية لدى الأم والطفل كانت أعلى في مجموعة الولادة القيصرية، وكان الفارق ذا دلالة إحصائية.
- أخيرا أبدت الغالبية العظمى من السيدات في كل من المجموعتين رغبتهن في ممارسة الرضاعة الطبيعية

الخلاصة والتوصيات

يستنتج من الدراسة أن مشاكل الرضاعة الطبيعية تبدو كثيرة الحدوث في الأسبوع بعد الـولادة، خاصة في حالات الولادة القيصرية، وقد يعود ذلك لانخفاض مـستوى الـوعي والمعلومـات بالرضاعة الطبيعية، وانتشار المفاهيم والمعتقدات الخاطئة، مما يؤدي إلى أخطاء الممارسة.

وعليه توصي الدراسة بأن يعطي الأطباء والممرضات اهتماما أكبر بتثقيف السيدات وإعطائهن معلومات كافية عن الرضاعة الطبيعية وفوائدها وممارساتها السليمة، وتشجيعهن علـى بـدئها مباشرة بعد الولادة، وأيضا يجب أن يكون لممرضة العمليات غير المعقمـة دور فـي تثقيـف وتشجيع السيدات اللواتي تلدن بعملية قيصرية على الرضاعة الطبيعية.

Effect of music therapy on autistic children

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Abstract:

The use of music in healing is as old as the origin of human civilizations. This study aims to assess (1) reaction of autistics to music therapy (2) the effect of music therapy on autistics verbal communication, social traits, sensational and neurological perception and physical symptomatology. The study was conducted at El Basma center for children with special needs in Shebin El Kom at Menoufya. All available autistic children (30) were selected. Two tools were utilized for data collection. One tool was developed by researchers and the other tool was developed by Mohammed A (2005). The results showed that autistic children had high interaction with music . Also, music therapy had a positive influence on reducing some associated unaccepted autistic problems related to verbal, communication, cognitive and their physical health status. Therefore, it was concluded that music therapy could reduce unwanted autistic traits and the sufferings of autistic children. Also, it is recommended that nurses caring for autistics must have talents in music and the will to compose songs for them.

Keywords: Music therapy - autism

Introduction:

Autism Spectrum Disorder refers to a group of pervasive developmental disorders. This group includes autism, Asperger Disorder (AD), and Pervasive Developmental Disorder. Autism Spectrum Disorder is characterized by impairments in three domains: social interaction, communication and restricted repetitive behaviors or interests. Autism Spectrum Disorder seems to be on the rise, it affects between two and six children out of every 1000 in USA. Above all, the National Autistic Society suggests a possible prevalence rate of 1 in 100 people in the UK (**National Autistics Society Statistics Sheet, 1997and Goldenino, 2008).** In Egypt, there is no available statistics about the prevalence of autism.

Meanwhile, there is no cure for autism, nor is there a standard therapy that works for all people with autism (**Inglese, 2009)**. Most people with autism show developmental progress and respond to a combination of treatment and special education **(Boso et al; 2007** and **Humphries, 2009)**. Music therapy is an underestimated treatment for children who have communication disorder and developmental delays because data on the potential behavioral effects of music therapy in autism is scarce. Above all, limited studies showed that organized music

therapy sessions which are provided by therapists who have knowledge about music, anatomy, psychology, research techniques, and other subjects will more likely improve self esteem, social interaction in elders and autistic people (**Zarate& Diaz,; 2001**). Moreover, **Boso et al., (2006)** indicated that there was a shortage of rigorous scientific data supporting the clinical application of music therapy and there was a need to confirm and expand the preliminary findings regarding the potential and actual effectiveness of music therapy. This need should be addressed through controlled investigations on the short and long term effect of music therapy in clinical conditions.

Aims of the study: To assess:

(1) Reaction of autistics to music therapy.

(2) The effect of music therapy on autistics verbal communication, social traits, sensational and neurological perception and physical symptomatology.

Materials and Methods:

Design: A quasi experimental research design was followed.

Setting:

This study was conducted at El Basma Center for children with special needs at Shebin El Kom city in Menoufya governorate.

Sample:

All available autistic children (30 children) attending the previously mentioned setting were included.

Tools of the study:

Two tools were utilized for data collection.

Tool one: It was designed by the researchers**.** This tool was divided into two parts.

- **Part one:** Biosocial characteristics. It included questions about children's names, ages, mothers' and fathers' education and mothers' and fathers' occupation.
- **Part two:** General observations. It was divided into two sections.

  Section one: Observable reaction to music. It included a checklist about characteristics of reaction towards recorded music e.g. no reaction, smiling, dancing, others.

  Section two: Bio-psychosocial problems. It included a checklist of problems such as temper tantrums, standing far away from researchers and piano, trying to escape and go back into class, attempting to control the movements of hands and arms, presence of seizures and tremors, affection, communication and behavior.

Tool two: It was called Autism Treatment Checklist. The tool was designed by **Mohammed A. (2005**). This tool was divided into four parts:

- **Part one** (Verbal Communication): It included a likert scale that was divided into 14 questions about knowing his/her name, response to no or stop, following simple orders, number of words said by the child, composing sentences and number of words in each sentence and abilities in communication as well as conversation.
- **Part two** (Social characteristics): It included a likert scale that was divided into twenty questions about social detachment, ignoring others, amount of attention paid to others, cooperation , eye to eye contact , interaction with events, imitation, and feelings towards hugging.
- **Part three** (Sensational and Cognitive Perception): It included a likert scale that contained 18 questions about appropriatness of response when his name was called, response towards compliment, ability to discriminate others and animals, looking at pictures and following television, playing appropriately, having appropriate facial expressions, etc.,
- **Part four** (Physical Status and Health Related Problem). It included a likert scale that contained 25 questions about health problems such as enuresis, diarrhea, constipation, sleep troubles, overeating, undereating, etc.,

Methods:

1. A thorough review of literature was done to collect data about autism and music therapy.
2. Data collection tools were selected.
3. Content validity was tested by one expert in pediatrics and two experts in providing care for autism.
4. A written approval was obtained from the director of the previously mentioned setting.
5. Ethical considerations for data collection were followed through obtaining parents' acceptance to share in the study and notifying them that participation was voluntary.
6. A pilot study was carried up on 5 autistics to identify the feasibility of the tools.

   Reliability: Cronbach coefficiency alpha was 0.75 and Pearson Correlations ranged between 0.50-0.80 for all items of the tools.
7. A number of 30 autistic children were individually assessed for problems associated with autism (verbal, communication, social, cognitive, sensational and physical health).
8. General objective of the music therapy sessions was set by the researchers. **The objective** was to reduce symptoms of autism through developing a music therapy intervention.

9. **Preparation for sessions:**

- Music therapy room was prepared with only three chairs, a table and an Oregon in order to reduce unnecessary visual stimulations. Colored stickers were applied on the fingers of the Oregon to visually attract autistics and to be differentiated easily by them. Besides, researchers closed the windows of the room in order to reduce other auditory stimulations.
- One day before the start of music therapy sessions, all autistics (30) were asked to listen to a tape recorded music and their reactions towards music were observed and recorded.

10. **First session of music therapy was implemented as follows:**

- Each child had an individual starting session.
- Specific objectives of the session were flexible to fit the needs of each autistic child.
- At the first session all autistic children refused to share and tried to escape from the room into their most familiar common classrooms. Children were welcomed by researchers. One of the researchers tried to utilize their sensitivity towards music through starting to play common international children music melodies on oregon such as Frero Jacko and Do Re Me. Also, researchers composed a song using the name of each child and started to sing it for each child during his/ her session. Besides, children were allowed to investigate the oregon and to play on it in order to feel familiar and safe with the instrument. Then, the majority of children showed happiness and started to feel relax that they were refusing to go back to class by the end of the session.
- Four children had temper tantrums accompanied by screaming, throwing of furniture and tearing of their own clothes. One of the researchers played music on an oregon to calm each of them separately. Afterwards, researchers decided to hold the next music session for each of them at their own class where they can share safely and try to play oregon with the help of one of the researchers.
- Two other autistic children were afraid from researchers and absolutely refused to sit beside them and preferred to stand far away. Several attempts were tried with them until it was

found that they were feeling secure and relax if they were hugged and embraced.

- Two other autistic children refused to sit on piano chair and preferred to stand far away from it with his head, back and buttocks touching the wall of the room. Researchers had to change the chair and bring him his most preferred chair.
- Children were encouraged to share in sessions and get rid of their fears through saying bravo or clapping hands.

11. Subsequent music therapy sessions:

- Each autistic child had an individual music therapy session.
- Specific objectives of each session differed according to the specific needs (cognitive, linguistic, eye-hand coordination, sensory motor and social)of each child and his /her level of development.
- Each session was started by playing international children songs in order to stimulate them to actively share in sessions. Afterwards, they were asked to sing songs composed by researchers and adapted to their level of linguistics skills. Children who were unable to speak were asked to say la la la, children who were able to say words were asked to sing one sentence, children who were able to tell one sentence were asked to sing two or more sentences. All children had to follow the tone of the played music in order to correct speech associated problems (e.g., echolalia, speed problems).
- Also, children were allowed to play oregon in their own pattern at each session. Afterwards, oregon was brought closer to the eye level of the child. One of the researchers held the right hand of the child while keeping the fore finger pointed to the oregon and a simple practical training in playing a song accompanied by asking the child to keep his eyes on his finger was done.
- One of the researchers had to observe the eye hand coordination of each child during the music therapy sessions in order to always direct his/her attention to look at the finger used for playing oregon.
- Autistic children with fewer autistic symptoms (4 children) were shown how to play a simple music sentence and were left to try using the five fingers of their hands.
- At the end of each music session, each child was thanked and received a positive reinforcement in the form of candies or biscuits.

- Each child received 64 music sessions and each session lasted between 20-30 minutes according to the child's need for rest. Sessions were conducted 4 days /week for 16 weeks.

Statistical analysis:

Data was categorized, tabulated and prepared for computer statistical analysis. Then, it was presented using descriptive forms. Autism treatment checklist was analyzed using the following scoring system:

Scoring for verbal communication, social characteristics problems, sensational and cognitive perception problems

No problems	1
Some extent of problems	2
Large extent of problems	3

Scoring system for physical status and health related problems:

No problems at all	1
No problems	2
Some extent of problems	3
Large extent of problems	4

Data was analyzed using SPSS version 13.0. Qualitative variables were compared using paired student t-test and chi-square. Data was described in the form of numbers, means and standard deviations. Statistical significance was considered at P-value<0.05.

Results

Table (1) represents that approximately half of autistics ranged between 5 to 10 years of age, males were more than females. More than half of mothers and fathers had university education. Also, approximately half of mothers were working and the majority of fathers were employees.

Table (2) shows that autistics reacted with tape recorded songs as shown by smiling and dancing.

Table (3) represents that there was a positive interaction and an influence of music intervention on autistics emotional, communication, affection, behavioral and neurological problems during the first session of playing oregon. A highly statistical significant difference was found at 1% level of significance between problems existed immediately before the first session and in continuation of such problems within the same session.

Table (4) shows that there was a reduction of some verbal communication problems related to knowing his/her name well, using one

to ten words in speaking, and continuing speech with others well. Therefore, a statistical significant difference was found between the corrected verbal communication problems before and after the implementation of sessions at 5% and 1% levels of statistical significance.

Table (5) denotes a reduction in five social characteristics problems. These characteristics were related to neglecting others and paying them attention, amount of attention paid to others talking to him/her, eye contact with others, waving with hands to say bye-bye, and smiling. A statistical significant difference was found between before and after the implementation of sessions at 5% and 1% levels of statistical significance

Table (6) demonstrates only reduction in three sensational and cognitive perception problems of autistics. These problems affected responding appropriately when called by name, perceiving danger and looking and identifying the place that others are looking at. A statistical significant difference was found between before and after the implementation of sessions at 5% and 1% levels of statistical significance.

Table (7) clarifies a reduced frequency in the majority of physical status and health related problems in autistics after the implementation of the therapy. These problems were diarrhea, constipation, sleeping problems, over or under eating, overactive, destruction of different things, sensitivity to sounds, fear and worry, looking sad and crying frequently, frequent sickness attacks, having a strict routine that can not be broken, shouting and agitation, need for sensitivity to pain, paying attention to only limited subjects and producing repetitive movements. A statistical significant difference was found between before and after the implementation of sessions at 5% and 1% levels of statistical significance

Table (8) illustrates that there were reduction of problems affecting the subscales of verbal communication, social characteristics and physical status and health related problems after the implementation of music therapy. A statistical significant difference was found between before and after the implementation of sessions at 5% and 1% levels of statistical significance. Also, there was no statistical significant difference between the total scores of subscales indicating the severity of autism.

Discussion

Mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community. Music therapy is thought to help the autistic child to participate in the community through the management of social withdrawal by making an initial

relationship with a musical instrument **(United Nations States Parties, 2005**)

It has been proven through the study that autistic children reacted to listened recorded music as shown by dancing and singing. These results agree with **Thaut (1988)** who found that autistic children had an unusual interest and response to music tones. Also, **Staum (2009)** indicated that autistic children possess unusual sensitivities to music.

The study illustrated that 4 autistics had temper tantrums. These could be due to fear and trials to withdraw from the unfamiliar situation. **Garon et al., (2009)** reported that autistic syndrome children are predisposed to more difficult temper tatrums overall than children with Down syndrome. Autistics with temper tantrums differed from autistics with no temper tantrums in their lower positive affect, higher negative affect and more difficulty in controlling attention or behavior and lower response to social rewards. Autistics having tempertantrums were related to having effortful emotional regulation. Above all, these temper tantrums stopped at all while listening to music played on Oregon which was accompanied by singing a song composed of the name of each of the children. For this reason, music therapy might probably help in making emotional regulation.

Moreover, six autistics with generalized tremors and fits showed less frequent tremors and fits during music sessions. This could be due to researchers' manipulations of children's sensitivity towards music in management and building a therapeutic non-threatening relationship characterized by observing their preferences, singing and dancing with music as well as playing oregon. Besides, researchers identified that musical stimuli could activate specific pathways in several brain areas associated with emotional amygdale, and prefrontal cortex (**Boso et al; 2007)**.

At the same time, the majority of children had fear and disobedient behavior before the first session. **Wood et al., (2009)** mentioned that a great majority of autistics exhibit fear and anxiety that cause significant functional impairment. It was noted that children's fear subsided during the first music therapy session. Perhaps, music accommodated and remediated the social and adaptive skill deficits of autistic children. This reduced level of fear could increase obedient behavior of children. Also, the example of modeling played by researchers as demonstrated by playing music with children and singing with autistics could increase social interactions and positive consequences of behaviors.

In addition, the study showed that after the implementation of music sessions, children were able to know their names better, acquired more words and prolonged sentences. This could be due to songs composed by the researchers which included sentences that repeated the

names of each child. These results agree with **Rapp (2007)** and **Wigram and Gold (2006)** who explained that music therapy intervention improves motivation as well as facilitates communication skills and social interaction. Also, **Wilson (2009)** indicated that cooperative singing and music making creates a healthier environment for those who may have no other way to connect with family or community that some children who rarely speak will sing along songs they have learned. **Miller and Toca (1979)** identified that an adapted melodic intonation (singing plus an intoned rather spoken verbal stimulus) helped psychiatric patients to produce trained, imitative and spontaneous intoned verbalizations.

This study demonstrated that structured music intervention enhanced eye contact in autistic children. This could be due to researchers' observation for autistics eye contact with musical instrument and their continuous asking for children to look at their own fingers while playing oregon. There were other improvements in social characteristics related to paying attention to others, communication with others and waving bye-bye with hands. These results agree with **Stephens (2008**) and **Evans (2009**) who indicated that musical instrument provides an initial point of contact between the autistic and another individual by acting as an intermediary. **Kaplan and Steele (2005)** found that autistics generalized skills and responses acquired in music therapy are more than the same skills acquired in non-music therapy environment. **Wilson (2009)** clarified that making music and singing songs can build a more harmonious community of support for everyone. **Barber (1999)** indicated that music provides a more peaceful and relaxing environment for autistic children.

Besides, this study clarified that autistic children had fewer physical complaints after the implementation of music intervention. **Boso et al., (2006)** indicated that musical experience activates several biochemical mediators such as endorphins, endocanna binoids, dopamine and nitric oxide that could be useful in the clinical management of neurological and psychiatric disorders. Consequently, physical complaints related to psychological troubles are reduced.

On the other hand, it was obvious from the study that musical intervention did not influence many areas of sensational and cognitive perception of autistics, some areas of verbal communication and some unwanted characteristics of autism. This could be due to the more prolonged interval of time that was needed for the management of autism. **Boso et al., (2007)** identified that the best results could be obtained at long term music intervention. **Kostka (1993)** analyzed music therapy outcomes and found that some music therapy goals can be achieved within several months and others can be achieved within one year or more.

Conclusion:

It was concluded that music therapy could reduce fear, temper tantrums, some neurological disorders, disobedience and physical associated problems. Meanwhile, it reduced problems related to verbal communication skills, socialization, cognitive and sensational perception as well as problems associated with physical health status.

Recommendations:

1- Music therapy can be used in providing care for autistic children if there is a special room that is prepared with limited visual and auditory stimuli and nurses who are experienced with special needs of autistics, willing to play music and sing with them and have a previous training in teaching autistics at any community setting (e.g., Karitas). Besides, nurses must have talents in music and the will to compose songs or whatever is needed to reduce autistic symptoms in a loving and encouraging atmosphere that promotes self esteem.

2- Comparative studies are needed to be carried out to compare their results with the results of the present study. Suggested studies can be the impact of longer term music therapy on autism, the impact of video-based intervention on autism, musicality adapted stories and the use of color theory as behavioral modifier.

Table (1): Biosocial characteristics of autistic children

Items	Autistics N = 30	
	N	%
Child's Age		
<5 years	6	20.0
5-10 years	14	46.7
>10 years	10	33.3
Sex		
Male	18	60.0
Female	12	40.0
Mother Education		
Preparatory	2	6.7
Secondary	12	40.0
University	16	53.3
Father Education		
Secondary	14	46.7
University	16	53.3
Mother Occupation		
Housewife	12	40.0
Working	18	60.0
Father Occupation		
Doctor	2	6.7
Pharmacist	0	0.0
Teacher	0	0. 0
Employee	28	93.3

Table (2): Reactions of autistic children to recorded songs

Reaction	Autistics N=30	
	N	%
None	6	20.0
Smiles	12	40.0
Dances	12	40.0

Table (3): Emotional, communication, affection, behavioral and neurological problems found between autistic children before and during the first session of playing Oregon.

Types of problems	Before N=30		During N=30		X^2
	N	%	N	%	
Emotional:					
Fear	28	93.3	0	0.0	21.00**
Pleasure	2	6.6	30	100.0	
Communication:					
Avoids personal interaction	26	86.6	0	0.0	21.00**
Showing some signs of interaction	4	13.4	30	100.0	
Affection:					
Temper tantrums and throwing furniture					
Present	4	13.4	0	0.0	7.64**
Absent	26	86.6	30	100.0	
Behavioral:					
Obedient	4	13.4	30	100.0	7.64**
Disobedient	26	86.6	0	0.0	
Neurological:					
1- Tremors accompanied with fits					
Frequent	6	13.4	0	0.0	21.00**
Absent	24	86.6	30	100.0	
2- Control of movements of arms and hands:					
Unable to control	6	13.4	0	0.0	15.56**
Attempts to control	24	86.6	30	100.0	

***P<.01*

Table (4): Verbal communication problems of autistics before and after music therapy

Verbal problems	Before Mean ±SD	After Mean ±SD	t- test
1- Knows his/her name well	1.60± .35	1.00± .36	3.2**
2- Responds well to No and follows orders	1.93± .96	1.40± .74	1.7^{ns}
3- Uses only one to ten words in speaking	2.13± .54	1.53± .83	2.2*
4- Explain their wants to others well	1.47± .75	1.00±.33	1.5^{ns}
5- Has a meaningful speech and questions	1.47±.74	1.33±.90	0.4^{ns}
6- Uses several consequent sentences and communication is suitable to age	1.60± .74	1.47±.91	0.4^{ns}
7- Continues in speech with others well	1.87± .35	1.33±.90	2.1*

*^{ns} P>.05 *P<.05 **P<.01*

Table (5): Social characteristics problems of autistics before and after music therapy

Social characteristics	Before Mean±SD	After Mean±SD	t- test
1- Totally isolated and prefers to be alone	2.87± .35	2.73± .70	0.7^{ns}
2- Neglects others and don't pay them attention.	2.33± .90	1.73± .46	2.3*
3- No or little attention to others talking to him	2.60±.51	1.60± .51	5.4*
4- Uncooperative and resists others	2.60± .51	2.27± .70	1.5^{ns}
5- No eye contact with others	2.13± .64	1.27± .46	4.3**
6- Do not show emotions to others if something happens	2.47± .74	2.07± .80	1.4^{ns}
7- Can say hello to parents or communicate with others	2.47± .74	2.07± .80	1.4^{ns}
8- Hates to be embraced or carried up	2.60± .51	1.93± .88	1.1^{ns}
9- Un capable to share others in their work or Feelings	2.47± .92	2.07±.03	1.1^{ns}
10- Can not wave with hands to say bye-bye.	2.14± .64	1.27± .46	4.2**
11- Has several mood swings and unsuitable Traits	2.13± .64	1.53± .35	0.8^{ns}
12- Rarely smiles	2.40± .51	1.60± .74	3.5**

^{ns} *P>.05 *P<.05 **P<.01*

Table (6): Sensational and cognitive perception problems of autistics before and after music therapy

Sensational and cognitive perception Problems	Before Mean ±SD	After Mean ±SD	t- test
1- Responds appropriately when called by Name	2.00± .93	1.47± .52	6.3**
2- Responds appropriately to compliment and shows facial expressions	1.80± 1.01	1.67± .82	0.4^{ns}
3- Looks at others, animals, pictures and watches TV	2.07± .96	2.00± .93	0.2^{ns}
4- Draws pictures, colors them and plays with different toys well.	2.73± .46	2.60± .74	0.6^{ns}
5- Understands TV stories and different explanations	2.00± .54	1.87± .64	0.6^{ns}
6- Perceives characteristics of surrounding Environment and is familiar with it	1.87± .64	1.73± .74	0.5^{ns}
7- Perceives danger	2.00± .54	1.60± .50	2.1*
8- Wears clothes independently and shares in different activities	2.20± .86	2.13± .83	0.2^{ns}
9- Curious, cares about other things and performs adventures	2.27± .45	2.20±.68	0.3^{ns}
10- Looks where what others look at and Identifies what are they looking at.	2.13± .36	1.47±.35	2.6*

^{ns} *P>.05 *P<.05 **P<.0*

Table (7): Physical status and health related problems of autistics before and after music therapy

Physical status and health related problems	Before Mean + SD	After Mean + SD	t- test
1- Always has wet bed and pampers	1.93+ .60	1.47+.50	1.9^{ns}
2- Has frequent sickness attacks (e.g .diarrhea, constipation)	1.60+ .74	1.13+ .35	2.2*
3- Has numerous sleeping problems	2.00+ .76	1.47+ .52	2.3*
4- Over or under eating.	2.00+ .76	1.40+ .51	2.6*
5- Is overactive	1.93+ .96	1.47+ .52	2.6*
6- Hits or injures oneself or others consistently	1.27+ .72	1.00+ .00	0.7^{ns}
7- Destroys different things	1.60+ .74	1.00+ .00	3.2**
8- Is sensitive to sounds	2.13+ .64	1.53+ .83	2.2*
9- Shows a big amount of fear and worry	2.47+ .74	1.13+ .35	6.3**
10- Looks sad and cries frequently.	1.87+.83	1.47+ .52	2.4*
11- Has strict routine that can not be broken	2.27+ .46	1.73+ .46	3.2**
12- Shouts loudly and looks agitated.	1.27+ .70	1.00+ .00	1.5^{ns}
13- Needs sensitivity to pain	2.00+ .76	1.47+ .52	2.3*
14- Pays attention to only limited subjects	2.27+.70	1.60+ .51	3.0**
15- Produces a lot of repetitive movements	2.13+ .83	1.47+ .52	2.6*

*^{ns} P>.05 *P<.05 **P<.01*

Table (8): Mean and standard deviation of autistics total scores obtained from the subscales used for the assessment of the severity of autism

Subscale	Before Mean +SD	After Mean +SD	t- test
Verbal communication	18.53+ 9.10	15.67+ 9.65	2.50*
Social characteristics	25.80+ 8.50	17.47+7.39	2.87**
Sensational and cognitive perception	21.13+10.54	19.27+ 9.99	.50^{ns}
Physical status and health related problems	17.67+10.40	6.87+ 4.84	3.65**
Total scores of subscales (severity of autism)	83.00+37.54	59.13+30.25	1.92^{ns}

*^{ns} P >.05 *P<.05 **P<.01*

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تأثير العلاج بالموسيقى على الأطفال المتوحدين

مقدمه:

يعتبر العلاج بالموسيقى من أقدم أنواع العلاج المتبعة فى قارة أفريقيا و تتعدد فوائـده و لكـن المهم هو توظيفه باتباع الأساليب العلميه فى التخلص من بعض سمات التوحـد بهـدف اتاحـة الفرصه لمرضى التوحد للاندماج فى المجتمع و التطور العقلى و النفسى و الاجتماعى.

أهداف البحث:

١- تقييم تفاعل الأطفال المتوحدين مع الموسيقى.

٢- تقييم تأثير العلاج بالموسيقى على التواصـل اللفظـى، الـسمات الاجتماعيـه للتوحـد ، الادراك الحسى و العصبى و العلامات المرضيه الجسميه.

مكان الدراسه: مركز البسمه لرعاية الأطفال ذوى الاحتياجات الخاصه بشبين الكوم محافظة المنوفيه.

أدوات البحث: تم استخدام وسيلتين لجمع البيانات:

الوسيله الأولى: أعدتها الباحثتان للتعرف على مواصفات الأطفـال ودراسـة تفـاعلاتهم مـع الموسيقى و تنقسم الى قسمين:

القسم الأول : يتناول المواصفات البيولوجيه و الاجتماعيه.

القسم الثانى : ينقسم الى جزئين.

- الأول: استمارة لملاحظة تفاعل الطفل مع الموسيقى.
- الثانى: المشاكل التى يعانى منها الطفل أثناء ملء الاستماره.

أما **الوسيله الثانيه**: فتناولت قائمة علاج التوحد التى أعدها محمد أ.(٢٠٠٥) و تنقسم هذه الوسيله الى أربعة أقسام:

القسم الأول: التواصل اللفظى. القسم الثانى: السمات الاجتماعيه.

القسم الثالث: الادراك الحسى و العقلى. القسم الرابع: المشاكل الصحيه.

نتائج البحث:

- يتفاعل الأطفال المتوحدين تفاعلا شديدا مع الموسيقى .
- تؤثر الموسيقى تأثيرا ايجابيا على التواصل اللفظـى، الـسمات الاجتماعيـه للتوحـد ، الادراك الحسى و العصبى و العلامات المرضيه الجسميه المصاحبه.

الاستنتاجات: العلاج بالموسيقى يساهم فى التقليل من حدة سمات التوحد

التوصيات: ضرورة استخدام العلاج بالموسيقى فى علاج التوحد و اجراء الأبحاث المقارنه.

Effect of Vaginal Birth after Caesarean Section on women's Childbirth Experiences and Neonatal Outcomes

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Abstract

Evidence based practice stresses that Vaginal Birth after Caesarean Section (VBAC) is recommended for women with a previous lower segments caesarean section in the absence of indication for caesarean section as it offers the most benefits to the health of both mother and child. **Aim of the study**: were to assess the effect of VBAC on neonatal outcomes and maternal problems and to explore women's views on their VBAC experiences**. Design**: A prospective cross sectional study. **Setting** The study was conducted at the Labor and Delivery Unit in Suez Canal University Hospital in Ismailia City. **Sample:** Purposively 300 parturient women were recruited for the purpose of the study. **Results:** Findings showed that successful vaginal birth was achieved in 80% of women in the study; women with successful VBAC had more positive feeling compared to their last time than women with ERCS (Emergency Repeated Caesarean Section). The majority of successful VBAC women reported having their babies and started breast feeding immediately. More than half of women in the study stressed their right to decide on their mode of birth but with more and enough information for the informed choice. Neonatal outcomes for a successful VBAC women were positive than those of newborn babies born by ECS. Also, there were a statistically significant differences in relation to uterine dehiscence (p=0.003) and period of hospital stay (p=0.000) among women with successful VBAC and women with ECS. The majority of women with successful VBAC and 40% of ERCS would plan for future vaginal birth and would recommend it for other women in the same situation. **Conclusion:** VBAC has positive outcomes on both neonate and women's post partum problems, birth experiences and early bonding.

Keywords: VBAC, Women's experiences, informed choice, vaginal birth, neonatal outcomes

Introduction:

The way a woman gives birth can impact her and her family in ways she might not expect. It's imperative that women know how to give birth in her own. Spontaneous vaginal birth involves fewer risks than caesarean section. Without a clear and compelling need for a caesarean, a spontaneous vaginal birth without an episiotomy is likely to be the safest way to give birth **(Masciale, 2004).** A caesarean section is a form of childbirth in which a surgical incision is made through a mother's abdomen after 28 weeks to deliver one or more babies **(Finger, 2003).**

Caesarean section rate has risen over the past two decades from 5% to 25% in the United States and some other western countries The rate in the United Kingdom was 21.4% **(Morrison and Mackenzie, 2003),** and 24.4% in the United States **(Cisse et al., 2004).** In Turkey, the percentage of caesarean deliveries for the year 1998 was found to be 26.1% while the estimated rate for the year 2001 was around 30% **(Koc, 2003).** In Nigeria, there has been a progressive rise in caesarean section rates from year 1970 up to 2002, from 9.4% to 34.6% respectively **(Walker et al., 2004).** In Egypt, the rate of caesarean deliveries is still high, hospital caesarean deliveries were 13.9% in 1988 and the rate increased to 22% in 2000. Approximately 25% of all caesarean deliveries were for the indication of prior caesarean delivery **(Ministry of health and population, 2004).**

The practice of elective repeated caesarean section has been changing gradually after the publication of numerous studies that have substantiated the efficacy and safety of a trial of vaginal birth after caesarean section **(Cahill et al., 2006). Khawaja et al. (2004)** states that no country in the world is justified in having a caesarean rate greater than 15%.

According to **Enkin, (2000),** women who undergo a caesarean section are at significantly higher risk than women who have a vaginal birth for infection, re-hospitalization, and poor birth experience. **Allen et al. (2003)** reported that babies delivered by caesarean section are less likely to be breastfed, and are at significantly higher risk than babies delivered vaginally for breathing problems and asthma in childhood and in adulthood. In addition, there is an increased likelihood of serious problems for mothers and babies in future pregnancies, including infertility, ectopic pregnancy, placenta problems, fetal death and higher health care cost. **Downe, (2008)** concludes that, hospitalization and the medicalization of childbirth have created a culture of fear in which women have lost confidence in their ability to give birth safely. Evidence based practice stresses that trail of VBAC is recommended for women with a previous lower segments caesarean section in the absence of indication for caesarean section as it offers the most benefits to the health of both mother and child **(Grobman, Peaceman et al. 2000, Hook 1997)**. However, this must be weighed against the increased risk of morbidity if vaginal delivery is not achieved. This study seeks to address the effect of Trail of Labor (VBAC) on neonatal outcomes and maternal problems and also to identify women's views on their experiences.

Aims and Objectives

This study was designed to compliment local audit data by:

1- Assessing the effect of vaginal birth after Caesarean section (VBAC) on neonatal outcomes and maternal problems.
2- Exploring women’s views on their VBAC experiences.

Material and Methods

Research Design:

A prospective cross sectional study design was selected for this research. Such design fits the nature of the study under investigations, in which the researcher tried to assess the effect of VBAC on neonatal outcomes and maternal problems and to document women's views on their experiences

Setting:

The study was conducted at the Labor and Delivery Unit in Suez Canal University Hospital in Ismailia City, during the period from August 1, 2005 to the end of July 2006

Subjects: Subjects in the study were collected in two phases:

First phase: aimed to comprise of 300 parturient women who were recruited from Labour and Delivery Unit at Suez Canal University Hospital during their early first stage of labour. They were selected purposively depending on the following criteria:

- Women with previous one lower segment caesarean section.
- Parturient women who desired and accepted the trial of VBAC.
- Single viable fetus.
- Cephalic presentation at the onset of labor.
- Gestational age ≥ 37 weeks.
- Spontaneous onset of labor.
- Adequate pelvis.

Second phase: was to document women's views of their VBAC experiences, out of the 300 women who attended the trail, only 31 women were interviewed 2 hours post partum, according to the following criteria

- Health status "The woman was physically and mentally ready to be interviewed"
- Awake
- Accepted to be interviewed

Tools of Data Collection: Two tools were used to collect data in the study.

Tool (1): A structured questionnaire was designed by the researchers to collect data about the consequences of VBAC on neonatal outcomes and maternal problems and gather data about women's views on their experiences. It consists of two parts:

First Part: It comprises; data about women age, parity, duration of pregnancy and spacing between the previous and present labour.

Second Part: Summary of labor sheet was designed to collect data about the duration of the stages of labor, the mode of delivery whether spontaneous or assisted vaginal delivery or emergency repeated caesarean section (ERCS) and whether labour was augmented by oxytocin or not. It also included data about the condition of the uterus and perineum after labour. Moreover, it included data about the immediate postnatal problems that might be encountered by the woman such as: presence of postpartum haemorrhage, administration of IV blood, uterine dehiscence or rupture, hysterectomy, the period of hospital stay for the woman, evaluation of the neonatal condition such as: Apgar scores at the first and fifth minute, weight of the neonate, admission to Neonatal Intensive Care Unit (NICU) or not.

Tool (2): An interview structured questionnaire was designed by the researchers to collect data about women's views on their VBAC experiences. It consists of items related to women's informed choice on the mode of labour, women's opinion for their experiences, and plan for future labour.

Methods:

1. A permission to conduct the study was obtained from the head of the Maternity Ward as well as the Director of Suez Canal University Hospital.
2. A jury of three expertises from Community Nursing and Maternity Nursing Departments was appointed to test the content validity and clarity for tool 2. The recommended modifications were done.
3. The internal consistency reliability of time management assessment questionnaire was assessed by using coefficient alpha and it was 0.82.
4. A pilot study was conducted on seven head nurses to identify ambiguous questions. Accordingly, minor changes were made for few items.
5. The objectives of the study were explained to the study subjects and their written consents were obtained.
6. Confidentiality of any obtained information was ensured.
7. Informed consent was taken for the trial of VBAC then; every woman was allowed to undergo the trial of labor, if no contraindications existed.
8. Vaginal birth after caesarean section trial was prospectively monitored; clinically and electronically throughout labor by the researcher and under the supervision of the obstetrician on duty.
9. The uterus was examined routinely after delivery of the placenta to detect uterine dehiscence.

10. In case of non-reactive CTG tracing or failure to progress which needed an emergency action, the situation was reassessed whether to continue the trial or re-evaluate the plan.
11. After delivery, the result was documented as either success or failure of vaginal birth after caesarean section and correlations between the result and the neonatal outcomes and the encountered maternal problems were done.
12. Women who were awake with good physical condition and agreed to participate in the study were interviewed 2 hours postpartum by the researchers.

Statistical analysis:

Data collected were processed and analyzed using the statistical package for the social science (SPSS) version 13. Quantitative data was expressed as means ± SD, while qualitative data was expressed as numbers and percents. Student t-test was used to test the significance between quantitative variables, while Chi square and Fisher's exact test were used to test the significance between qualitative variables.

Results:

Table (I) shows the general characteristics of the sample which indicates that slightly more than three fifths of the sample (61.7%) were in the age of 20 to less than 25 years, and the mean age ± SD was 29.2 ± 4.8. Regarding parity, the table shows that more than one third (39.0%) of the sample were primipara. Meanwhile, the highest percentage (45.0%) was Para two or three. For duration of pregnancy more than three quarters of the sample (77.3%) were between 37^{th} to less than 40 weeks. As for the spacing between the caesarean section and the present pregnancy, the same table shows that it was ≥ 18 months in slightly more than half of the sample (52.7%), with a mean duration of 39.5 ± 3.3 months.

Regarding **figure (1),** it concerned with the frequency distribution of the study subjects according to their mode of the present delivery. The majority (80.0%) of the parturient women had successful VBAC. Almost three quarters of these women (74.0%) had spontaneous vaginal delivery and less than one tenth (6.0%) had assisted vaginal delivery. Moreover, it is obvious from the same table that one fifth (20.0%) of the sample had emergency repeated caesarean section due to either fetal distress or failure of labor to progress (12.7% and 7.3% respectively).

Table (2) points out the relationship between the study subject's mode of delivery and Apgar score at the first and fifth minute. Regarding to Apgar score, the table shows statistically significant relation with a trend toward increasing incidence of Apgar Score at 5 minutes of less than 7 (100.0%) in

the ERCS group, compared to non among the successful VBAC group. Meanwhile, the admission of the newborn to NICU was also 100.0% in the ERCS group. The same table reveals that babies with a neonatal weight 2.500-3.000kg were more likely to be delivered by successful VBAC (89.8%). While those with a neonatal weight 3.500kg to 4.000kg were significantly more likely to be delivered by ERCS (66.7%). Differences observed are statistically significant (X2=32.4 and p=0.00).

The relationship between the study subject's mode of delivery and the encountered maternal problems is described in **table (3)**. The results demonstrated that women who had ERCS were more likely to have uterine dehiscence (100.0%), receive blood transfusion (75.0%) and have postpartum haemorrhage (57.1%) than those who had successful VBAC (0.0%, 25.0%, and 42.9% respectively). As for the hospitalization period, the same table points to a statistically significant relation, with a trend toward decreasing mean (1.1 ± 0.3 days) of hospitalization period among those who had successful VBAC. (t=30.4 & p=0.00).

Table (4) presents women's views regarding to their rights during labour. The majority of women in the study (80.9% of successful VBAC , 70% of ERCS) agreed and strongly agreed that birth is a natural process and that should not interfered unless medically necessary. Only around 50% of the women interviewed greed that they have right to decide on their mode of birth but (76.2% of successful VBAC, 60% of ERCS) agreed and strongly agreed that they need more information to decide. More than 50% of women who had successful VBAC reported feeling positive compared to previous CS regarding to non women of those who had ERCS felt positive.

Table (5) reveals women's opinion for recent birth experiences. The table presents statistically significant differences between women's with successful VBAC and ERCS experiences (P=0.000). 95.2% of women with successful VBAC had their baby immediately, started breast feeding immediately and experienced less pain. Only 41.9% of women's with successful VBAC reported that they will need follow up compared to 100% of women's with ERCS.

Table (6) illustrates women's plan for future pregnancy, when women asked about their plans for future pregnancy, 85% of women from successful VBAC reported that they wish to give birth vaginally, in addition to 40% of women with ERCS were wish to give birth vaginally. 76.2% of women from successful VBAC would recommend vaginal birth to a friend in a similar position regarding to 30% of ERCS women.

Discussion

Women who deliver vaginally after a previous caesarean section have a lower incidence of postpartum haemorrhage, intra-partum infection,

anaesthetics complications, postpartum pain, and thromboembolic disease as compared to those having caesarean section. On the other hand, delivery by C.S limits a woman's obstetric future to a lower total number of possible deliveries, a higher rate of secondary infertility, ectopic pregnancy, placenta previa, placenta accrete and obstetric hysterectomy **(Enkin, 2000).** The practice of elective repeated caesarean section has been changing gradually after the publication of numerous studies that have substantiated the efficacy and safety of a trial of vaginal birth after caesarean section. This trend has been enhanced by the American College of Obstetricians and Gynaecologist's guidelines, which clearly support and encourage a trial of labor after caesarean section **(Cahill et al., 2006).** The aim of the present study was to assess effect of VBAC on neonatal outcomes and maternal problems and to explore their experiences from their point of views.

The trial of labor in the present study was successful in 80.0% of women. Of those 6.0% were assisted by vacuum extraction due to either prolonged second stage or maternal distress. One fifth of the sample (20.0%) had a repeated caesarean section due to fetal distress or failure of labor progress (Fig.1).

The study finding is in agreement with **Quinones (2005),** who found that successful vaginal birth was achieved in 74.0% of women with one previous caesarean section. In a similar study, **Coassolo (2005)** found that the prevalence of successful VBAC was 70%. In this perspective, **Gyamfi et al., (2004)** have addressed the issue that the chance of successful vaginal delivery is between 70.0% - 80.0%. This drops to about 50.0% - 60.0% in cases of scar after C.S and for failure of progress in labor.

The relatively high prevalence of the successful vaginal birth revealed in the present study, may reflect the various methods proposed to manage the trial of vaginal birth after caesarean section and the evidence for their role in the clinical practice.

The present study has also investigated the relation between the mode of delivery and fetal Apgar scores. It was found that Apgar scores <7 at the first minute and fifth minute were statistically higher among babies born by ERCS, with the result that 4 babies were admitted to the NICU (table 2).

These foregoing findings are in agreement with **Durnwald et al. (2004),** who have reported that, the neonates born by repeated caesarean section have low Apgar scores compared with those born by vaginal birth. This low Apgar scores may be due to the effect of the anaesthesia and caesarean birth or may be due to that, the neonate was not stimulated as would have been by vaginal birth **(Kennare et al., 2007).**

In this respect, several studies have demonstrated a difference in VBAC rates between patients with a birth weight greater than 4,000 kg and those with a lower birth weight. The odds ratio for this risk factor ranges from 1.2 - 1.9 **(Hibbard et al., 2001 & Blanchette et al., 2001).**

On the same line, the present study finding has demonstrated that women with a large neonatal weight (3.5- 4kg) were significantly more likely to be delivered by ERCS. This is explained by the morbid conditions that are associated with larger baby, such as obstructed labor. On the other hand, **Troyer and Parisi (2000)** prospectively studied 140 trials of labor in women with a previous caesarean section and found no significant difference among neonates delivered either by VBAC or by repeated caesarean section regarding the birth weight.

According to the present study results, the most common early post-operative complications following caesarean section were postpartum haemorrhage, the need for blood transfusion. Overall, more than half of ERCS group had such complications (table 3).

The study results are similar to those achieved by **Landon et al. (2004),** who found that, the rate of post partum haemorrhage and blood transfusion were higher in the failed VBAC group compared with the successful VBAC group. One of the most significant risks women face when considering a trial of labor is that of uterine rupture. This potentially fatal event may have significant maternal and neonatal squeal **(Diaz, 2002).** In the present study, only 4 uterine dehiscence occurred in the ERCS group compared with no recorded cases among the successful VBAC group. Furthermore, there were no recorded cases of true uterine rupture, hysterectomy, or maternal deaths among all the study subjects.

The current figure is very close to that reported by **Hibbard et al. (2001),** who have demonstrated that, the rate of uterine dehiscence was higher in the failed VBAC group compared with the successful VBAC group, with no hysterectomy or maternal deaths among the successful VBAC group or the ERCS group. In this respect, **Blanchette et al.(2001)** studied the maternal problems in 754 women who attempted VBAC-TOL and found that , there was only one uterine disruption in the successful VBAC group which was an asymptomatic dehiscence discovered at manual exploration of the uterus after delivery of the placenta. However, among the failed group there were 12 uterine ruptures, two of the twelve patients with uterine ruptures required emergency hysterectomy.

The present study findings have revealed a statistically significant relation, with a trend toward increasing mean (2.6± 0.35days) of hospital

stay among those who had ERCS (t=30.4 & p=0.00). This is consistent with **Hibbard et al. (2001),** who have reported that women who had caesarean section had higher mean hospital stay of 1.5 to 2 days compared with women in the successful VBAC group.

In the light of the present study findings, it can be concluded that, the majority of women (80.0%) had successful VBAC, whether spontaneous 74.0% or assisted by vacuum extraction 6.0%. Only one fifth (20.0%) of the study subjects had ERCS. Furthermore, more problems during the fourth stage of labor were encountered among women who had ERCS. This finding is in consistence with **(Hibbard et al., 2001)**

The current study revealed that women in the study either having successful VBAC or repeated ERCS believed in normality of labour and delivery and that birth is a normal physiological process and should not be interfered unless their medical indication. This finding is supported by several studies **(Davis-Floid, 2001).** It considered a joyful life experience however it may be a stressful and painful experience for some women **(El-Nemer, 2003).**

In relation to women's informed choice, that is helping them to share in decision making for their mode of delivery. Surprisingly, only 28.6% of women with successful VBAC and 20% of women with ERCS reported that they had no right to decide the mode of delivery for their labour and delivery. This findings is congruent with **El-Nemer & MacVan, 2004**, who reported that patients expected that health professionals to make decision for them and in addition they fear displeasing the doctors who are seen as a powerful figure. Also, it may be explained by the medicalization of childbirth which is well documented **(Walsh, et al,2004, Downe, 2004,2001)** and has resulted in healthy women being treated as if they were suffering a pathological condition rather than experiencing a normal physiological process **(Walsh et al, 2008).** However, 76.2% of women with successful VBAC and 60% of women with ERCS strongly agreed that women need more information to decide on the mode of delivery. However, without adequate information, choice becomes meaningless. Women require a clear explanation of why a caesarean was performed and need to be provided with evidence based information regarding the chances of a recurrence of the problem which resulted in an operative delivery **(Cahill, 2006).** This finding is congruent with **(El-nemer & MacVan, 2001)** who reported that access to information is an effective counterbalance to the medical control of childbearing and facilitates the empowerment of women. Interestingly, 50% of women with successful VBAC reported positive feeling with the trail of vaginal labour compared to none of women with

ERCS. This is in consistent with **Green & Baston, 2003** and **Beverly et al., 2008.**

It was found that there was a statistically significant difference between women who had successful VBAC and women with ERCS, the majority of women with successful VBAC were able to have their babies and start breast feeding immediately than women with ERCS. This finding is supported by **Landon (2004)** who reported that babies delivered by caesarean section are less likely to be breast fed, and are at higher risk than babies delivered vaginally.

As regard women's plans for future birth, the result shows interesting 85.7% of women with successful VBAC have a preference of vaginal birth and surprisingly, 40% of women with ERCS have preferred of vaginal birth. Again it supports the physiological nature of childbirth which is primitive born inside each woman **(Jodie et al., 2004, El-Nemer et al, 2006).**

Conclusion

In the light of the present study findings, it can be concluded that neonatal outcomes for a successful VBAC women were positive than those of newborn babies born by ECS. The majority of women who had successful VBAC had more positive feeling, had their babies started breast feeding immediately, compared to their last time than women with ERCS. More than half of women in the study stressed their right to decide on their mode of birth but with more and enough information for the informed choice. Also, there is a relation between mode of delivery, uterine dehiscence and period of hospital stay. The majority of women with successful VBAC and 40% of ERCS would plan for future vaginal birth and would recommend it for another women in the same situation.

Recommendation

On the basis of the most important findings of the study, the following recommendations are suggested:

1- The obstetrician and the nurse midwife should provide full adequate information for woman with previous one lower segment caesarean section who has no current indications for CS, about the risks and benefits of undergoing a trial of vaginal birth after caesarean delivery which is helping women to have informed choice and to plan the particular mode of delivery.
2- Vaginal birth after caesarean section trial of labor should be conducted in hospitals, with adequate facilities for immediate delivery and resuscitation of the newborn.

3- The concept of quality care should be always emphasized in nursing curriculum and in service training programs and should be applied for women at high risk labor, to improve nursing practice, and increase satisfaction among parturient women.

Table (I): General Characteristics of the Study Sample

Items		**No. (N= 300)**	**%**
Maternal age (years)	20 -	185	61.7
	25 -	62	20.6
	30 - 35	53	17.7
	Mean ± SD = 29.2 ± 4.8		
Parity	P1	117	39.0
	P2 -3	135	45.0
	≥P4	48	16.0
Duration of pregnancy (weeks)	37-	232	77.3
	40-42	68	22.7
Spacing between women's previous CS and present pregnancy (months)	< 18	142	47.3
	≥ 18	158	52.7
	Mean ± SD= 39.5 ± 3.3		

Figure (1): Distribution of the study subjects according to their mode of the present delivery

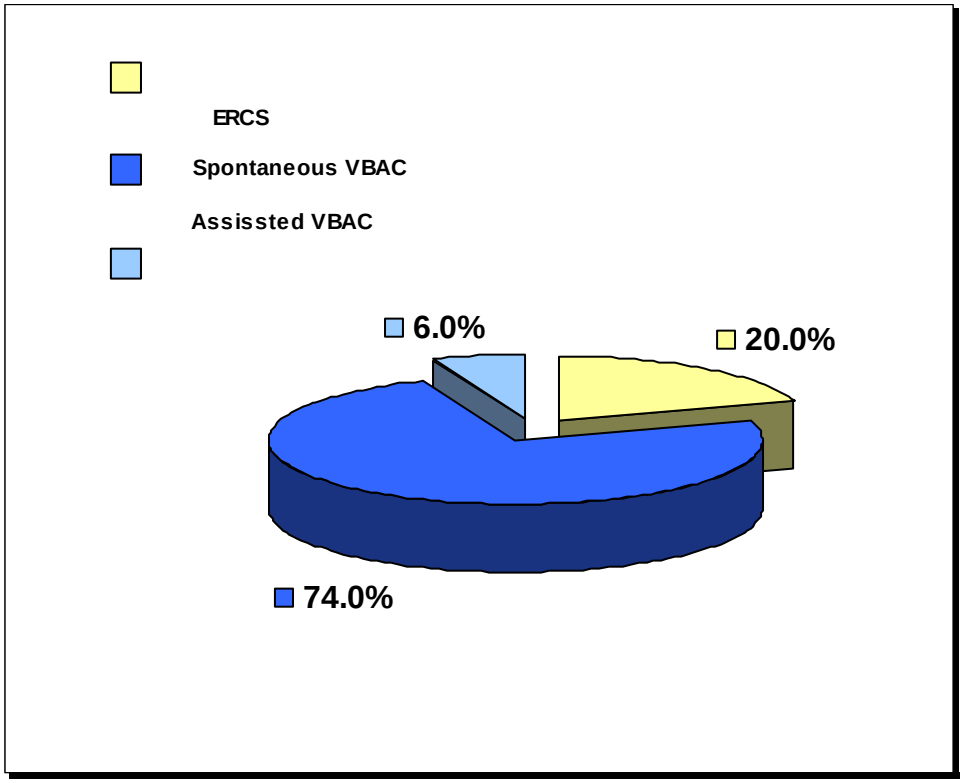

Table (2): The Relation between the Study Subject's Mode of Delivery and the Neonatal Outcomes

Neonatal Outcomes		Mode of Present Delivery (n=300)				Total	Test	P-value
		Successful VBAC (n=240)		ERCS (n=60)				
		No.	%	No.	%			
Apgar score < 7	At 1st min	9	45.0	11	55.0	20	Fisher's exact test	0.75
	At 5th min	0	0.0	4	100.0	4		0.03*
Admission to NICU		0	0.0	4	100.0	4	$X^2 = 4.5$	0.03*
Current neonatal weight (kg)	2.500 -	150	89.8	17	10.2	167	$X^2=32.4$	0.00*
	3.000 -	86	71.1	35	28.9	121		
	3.500 - 4.000	4	33.3	8	66.7	12		

(*) Statistically significant

Table (3): The Relation between the Study Subject's Mode of Delivery and the Encountered Maternal Problems

Maternal Problems	Mode of Present Delivery (n=300)				Total	Test	P-value
	Successful VBAC (n=240)		ERCS (n=60)				
	No.	%	No.	%			
Post partum hemorrhage	9	42.9	12	57.1	21	X^2= 0.4	0.54
Administration of IV blood	2	25	6	75.0	8	X^2= 2.3	0.06
Uterine dehiscence	0	0	4	100.0	4	X^2= 4.5	0.03*
Hospital stay (days) Mean ± SD.	1.1 ± 0.3		2.6± 0.35			t- test =30.4	0.00*

(*) Statistically significant

Table (4): The Relation between the Study Subject's Mode of Delivery and Women's Right to Decide

Women's right	Mode of Present Delivery, Total (n=31)								X^2	P-value
	Successful VBAC (n=21)				ERCS (n=10)					
	Disagree	Neutral	Agree	Strongly Agree	Disagree	Neutral	Agree	Strongly Agree		
Birth is a natural process that should not be interfered unless medically necessary	1 4.8%	3 14.3%	12 57.1%	5 23.8%	1 10%	2 20%	5 50%	2 20%	0.5	0.912
I had the right to decide my mode of birth	6 28.6%	4 19.0%	8 38.1%	3 14.3%	3 30%	2 20%	3 30%	2 20%	0.2	0.966
women need more information to decide	2 9.5%	3 14.3%	11 52.4%	5 23.8%	3 30%	1 10%	3 30%	3 30%	2.7	0.439
Feel positive compare to last time	1 9.5%	8 38.1%	8 38.1%	3 14.3%	7 70%	3 30%	0	0	11.8	0.002*

(*)Statistically significant

Table (5): The relation between the study subject's mode of delivery and women's opinion

Women's opinion for recent birth experience	Mode of Present Delivery, Total (n=31)				X^2	P-value
	Successful VBAC (n=21)		ERCS (n=10)			
	No	Yes	No	Yes		
Had my baby immediately	1 4.8%	20 95.2%	10 100%	0 0%	26.8	0.000*
Starting breast feeding immediately	1 4.8%	20 95.2%	10 100%	0 0%	26.8	0.000*
Pain feeling	1 4.8%	20 95.2%	6 60%	4 40%	11.8	0.002*
Need follow up	18 58.1%	13 41.9%	0 0%	20 100%	20.4	0.000*

(*) Statistically significant

Table (6): The Relation between the Study Subject's Mode of Delivery And Women's Plan For Future Birth

Plans for future birth	Mode of Present Delivery, Total (n=31)						X^2	P-value
	Successful VBAC (n=21)			ERCS (n=10)				
	Vaginal birth	CS	Unsure	Vaginal birth	CS	Unsure		
For my future birth, I wish to give	18 85.7%	0 %	3 14.3%	4 40%	2 20%	4 40%	8.17	0.017
I would recommend to a friend in a similar position	16 76.2	0 0%	5 23.8	3 30%	1 10%	6 60%	6.959	0.31

(*) Statistically significant

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تأثير الولادة الطبيعية بعد ولادة قيصرية سابقة على السيدات أثناء الولادة والمواليد الجدد

مقدمة

إن السيدات اللاتي يلدن ولادة مهبلية بعد ولادة قيصرية سابقة يتميزن بمعدل أقل لنزيف ما بعد الولادة ، وعدوي ما حول الولادة ، والمشاكل الناتجة عن التخدير، وآلـم مـا بعـد الـولادة ، وأمراض تجلط الدم مقارنة باللاتي يلدن ولادة قيصرية . ومن ناحية أخرى الولادة القيـصرية تحد من فرصة تعدد مرات الولادة للمرأة ، تزيد معدل العقم الثانوي ، والحمل خارج الـرحم ، والوضع غير الطبيعي للمشيمة ، والمشيمة الملتحمة ، واستئصال الـرحم. معظـم الدراسـات الحديثة تشجع الولادة الطبيعية بعد عملية قيصرية في حالة عدم وجود إشارة لعمليـة قيـصرية لأنها تتيح أكبر قدر من الفائدة لصحة الأم والطفل على حد سواء.

الهدف من الدراسة: تهدف الدراسة إلى

١. تحديد تأثير محاولة ولادة طبيعية بعد ولادة قيصرية سابقة على ناتج حديثي الولادة وعلى المشكلات التى قد تحدث للام.
٢. التعرف على خبرات السيدات أثناء الولادة الطبيعية بعد ولادة قيصرية سابقة

مكان البحث

تم إجراء هذه الدراسة في مستشفي جامعة قناة السويس بالإسماعيلية في وحدة الولادة والمخاض خلال الفترة ما بين ١ / ٨ / ٢٠٠٥حتى نهاية يوليو ٢٠٠٦

عينة البحث:

المرحلة الاولى:

تضمنت الدراسة ٣٠٠ سيدة تم اختيارهن بشكل هادف على أن يكن قد أجريت لهـن عمليـة قيصرية سابقة في الجزء السفلي من الرحم ، وآخذين بعين الاعتبار العوامل الهامة المختلفة التي تتعلق بالحمل الحالي والتي تتعلق بالولادة القيصرية السابقة ، وهؤلاء الـسيدات أتيحـت لهـن فرصة اجتياز محاولة ولادة مهبلية بعد ولادة قيصرية سابقة بعد أخذ إقرار موافقة علـي هـذه المحاولة من السيدات مع مراعاة ألا يكون هناك موانع لاجتياز هذه المحاولة ، وقد تـم رعايـة السيدات أثناء محاولة الولادة المهبلية بعد الولادة القيصرية إكلينيكيا والكترونيا بواسطة الباحثة وتحت إشراف الطبيب المناوب.

المرحلة الثانية:

تضمنت ٣١ سيدة بعد الولادة للتعرف على خبرات السيدات أثناء الولادة الطبيعية بعد ولادة قيصرية سابقة

أدوات البحث

١ ـ استمارة المقابلة الشخصية للأم : استخدمت لجمع بيانات الأم الشخصية والتـاريخ الطبـي والولادات و تقييم الأم قبل الولادة وجمع معلومات عن نتائج الفحص وتـشخيص الـولادة وتجميع البيانات الخاصة بتقدم الولادة وخريطة البيانات (البارتوجراف) ومرقاب الجنـين لتسجيل حالة الأم ، والجنين في المرحلة الأولي للولادة و ملخص الولادة : والتي اشـتملت علي نتائج المرحلة الثالثة للولادة ، والمشاكل المصاحبة للأم وحالة حديثي الولادة.

٢ ـ استمارة المقابلة الشخصية للأم للتعرف على خبرات السيدات أثناء الولادة الطبيعية بعد ولادة قيصرية سابقة.

النتائج:

١. بين العدد الكلي للسيدات اللاتى مررن بمحاولة الولادة المهبلية بعد الولادة القيـصرية السابقة ٨٠,٠ % ولدن ولادة مهبلية بينما ٢٠,٠ % فقـط ولـدن ولادة قيـصرية طارئة.

٢. مقياس أبجر أقل من ٧ عند الدقيقة الأولي والخامسة كان إحصائيا اعلي بين حديثي الولادة القيصرية (٥٥ %، ١٠٠% علي التوالي) مما نتج عنه دخول ٤ أطفال إلى العناية المركزة لحديثي الولادة.

٣. أكثر المشاكل شيوعاً بعد عملية الولادة القيصرية كانت نزيف ما بعد الولادة ونقل الدم (٥٧,١%، ٧٥% علي التوالي).

٤. كانت خبرات السيدات اللاتى نجحن فى الولادة الطبيعية أكثر إيجابية بالمقارنـة مـع خبراتهم السابقة. السيدات اللاتى نجحن فى الولادة الطبيعية احتضن أطفالهن مباشـرة بعد الولادة وبدأن على الفور الرضاعة الطبيعية و أكثر من نصف النساء في الدراسـة أكدن على حقهن في أن تقررن طريقة الولادة ، ولكن مع مزيد من المعلومات ما يكفي للاختيار الواعي.

٥. نتائج المواليد لنساء اللاتى نجحن فى الولادة الطبيعية كانت إيجابية من تلـك التـي للأطفال حديثي الولادة للسيدات اللاتى لم ينجحن فى الولادة الطبيعية . أيضا ، كانـت هناك فروق ذات دلالة احصائية فيما يتعلق ومدة الإقامة في المستـشفى بـين النـساء اللاتى نجحن فى الولادة الطبيعية والنساء اللاتى لم ينجحن فى محاولة الولادة الطبيعية.

التوصيات:

كانت خبرات السيدات اللاتى نجحن فى الولادة الطبيعية أكثر إيجابية بالمقارنة مع خبراتهم السابقة بالإضافة الى ان السيدات اللاتي ولدن ولادة قيصرية سابقة يحتجن إلى رعاية خاصة خلال فترتي ما قبل الولادة والولادة ، علاوة علي أن محاولة الولادة المهبلية بعد الولادة القيصرية لابد وأن تكون بمستشفي مجهز بتجهيزات كافية لعمل ولادة في الحال وعمل انعاش لحديثي الولادة كما يجب توفير عناية فائقة وتوعية جيدة من قبل ممرضة الولادة .