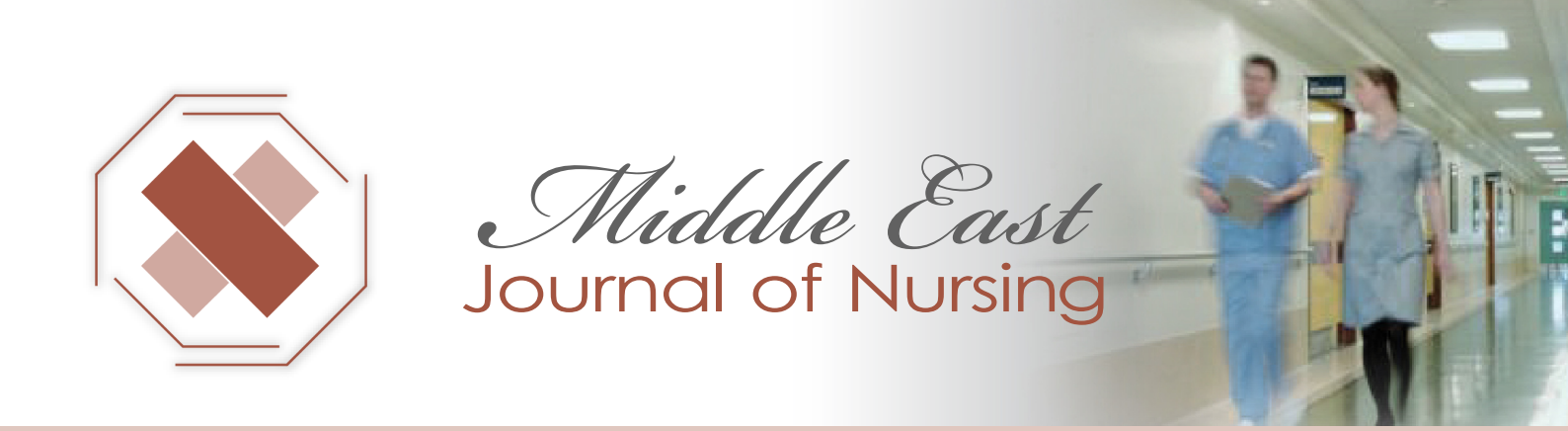

Middle East Journal of Nursing

September 2011
VOLUME 5 ISSUE 5

ISSN 1834-8742

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FROM THE EDITOR

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In this issue a Retrospective study from Jordan analyzed fingertip injuries: age distribution and mechanisms of injury, with discussion about different surgical options and strategies in management to obtain the best outcome. The authors stated that fingertip injuries are common and can have a great impact; immediate repair by hand surgeon is preferable. Local and regional flaps along with composite grafts in children yield the best outcome.

A paper from Prince Ali Hospital looked at hearing assessment before six months. Hearing assessment is one of the important causes of developmental delay in children and if not diagnosed and treated promptly it could result in speech delay. The authors stress that hearing loss is important to be diagnosed early for normal speech development, if diagnosed before 6 months of age.

A paper from Saudi Arabia looked at Management of diabetic foot ulcers from prevention to treatment. The authors stressed that diabetic foot ulcer is a common problem in diabetes and has numerous social, economic and medical impacts, affecting the patient, families and health care system. It increases morbidity in diabetics, characterized by a prolonged course of treatment and frequent hospital admissions.

A paper from Jordan discussed Mothers' Satisfaction towards Pediatric Nursing Care: Family Centered Care Initiative. The authors stress that Family Centered Care has become central to the delivery of pediatric nursing practice in the 21st century and is grounded on several principles that revolve around the central belief that the parents have a pivotal role in pediatric nursing care and they have been seen as experts on their child's emotional and psychological care.

A review paper looked at Pender's Health Promotion Model. The purpose of this review was to examine how the HPM was used in research studies. Eleven studies were reviewed; most of them were quantitative studies. The HPM was widely accepted in the nursing community and was implemented in nursing practice, education, and research. In addition, it was used in many countries to guide studies that address health promotion.

A paper from Iran attempted to analyse the Socio-demographic factors associated with abortion. The paper explores abortion practice among women in Iran. Though it is severely restricted by law, yet it is practiced by some women who really need to do it under certain circumstances, and for the reason of individual social welfare in particular, and public health in general. As compared with women in other Asian countries, the estimated number of abortions in Iran per year is very low.

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HEARING ASSESSMENT IN THE NEWBORN

Abstract

Introduction: Hearing impairment is one of the important causes of developmental delay in children, and if not assessed, diagnosed and treated promptly, it could result in speech delay.

If hearing impairment can be detected and tested before 6 months of age, it will result in better speech performance.

Methods: This study was conducted in Prince Ali Hospital during the 6 month period between September and February 2010-2011.

All newborns delivered were sent at one week of age to the ENT clinic to do hearing assessment by accoustic emission technique.

Results: Newborns examined during this period were 408. 40 initially had a hearing impairment. 10.1%
19 were males. 21 were females.

Conclusion: Hearing loss is important to be diagnosed early for normal speech development if diagnosed before 6 months of age.

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Introduction

Hearing impairment is one of the important causes of developmental delay in children and if not diagnosed and treated promptly, it could result in speech delay.

If hearing impairment can be detected and treated before six months of age, it will result in better speech performance.(1-4)

Hearing loss is one of the most common congenital anomalies, occurring in approximately 2-4 infants per 1000. Prior to implementation of universal newborn screening, testing was conducted only on infants who met the criteria of the high risk register (HRR). It was found that the HRR was not enough, given that as many as 50% of infants born with hearing loss have no known risk factors.

Reliable screening tests that minimize referral rates and maximize sensitivity and specificity are now readily available.

Early identification and intervention can prevent severe psychological, educational, and linguistic repercussions. Infants who are not identified before 6 months of age have delays in speech and language development. Intervention at or before 6 months of age allows a child with impaired hearing to develop normal speech and language, alongside his or her hearing peers(5).

Methods

This study was conducted in Prince Ali Hospital during a 6 month period between September and February 2010-2011.

All newborns delivered either by normal delivery or Caeserian Section were sent at 1 week of age to the ENT clinic to do hearing assessment by accoustic emission technique.

Also newborns who were admitted to the Intensive Care Unit underwent hearing assessment after discharge.

History was taken, whether there is family history of hearing impairment and if there are other congenital anomalies.

Newborns who had a flat response in either ear, were reassessed after 2 weeks.

Results

Newborns examined during this period were 408.

40 had initial hearing impairment 10.1%

19 were males, 21 were females.

All patients who had a flat response were reassessed after 2 weeks.

In our study we considered hearing impairment from the first examination.

3 had positive family history of hearing impairment.

One had congenital abnormalities of both ears

Patients who were admitted to the ICU for any reason had no hearing impairment.

Discussion

According to different studies, the incidence of hearing loss in the normal newborn population is 1-2 per 1000 live births. It was the same in our study. (1%)

According to one study, the speech performance of the infants, whose hearing problem was detected and treated before they were six months old, was the same as normal age matched children.(1,2,6)

In another study performed in the Netherlands, the prognosis of children whose hearing impairment was diagnosed before they were 3 months old, and treated before the age of 6 months ,was very good (2). It was the same in our study. Therefore we perform hearing assessment for all newborns at 1 week of age.

In another study done in Norway and Germany it was found that the prognosis was good if hearing impairment was diagnosed and treated before the age of 6 months (3,7).

All of these studies show the importance of early detection and treatment of hearing impairment in children. Unfortunately the age of detection of hearing loss is delayed even in developed countries if the screening for hearing impairment is not conducted during the first few months of life.(8) For example, in the United States the age of the detection of severe hearing loss is 20-24 months of age and for mild to moderate hearing loss is around 4 years of age (9).

In one study performed in Norway, it was shown that hearing impairment will be missed in about 50% of the infants if global screening is not performed. (7)

In our study, all normal deliveries come to do hearing screening tests and some of the patients who were admitted to the NICU do not come, and of patients who fail to perform their first exam, some of them do not come back.

There are several risk factors which are very important as precipitating events causing hearing impairment in the newborn and young infants, such as: prematurity and low birth weight, asphyxia, use of Aminoglycosides, hyperbilirubinemia, prolonged mechanical ventilation, bacterial meningitis, intra-uterine infections, craniofacial anomalies (we had one case).(10-13)

In our study we had no single case of hearing impairment in high risk neonates.

In another study, the incidence of hearing impairment of the infants who had at least one risk factor was very high in comparison to studies from other countries (2,6)

This difference was perhaps due to the referral nature of that center, which is one of the main units of admission of the high risk neonates in Tehran. Other factors which might have been significant in this difference were the lack of prenatal care, and inadequate facilities for measurement of serum drug levels such as Aminoglycosides.

Perhaps the reason that we had low incidence of hearing impairment in patients admitted to the NICU is because our hospital is a secondary hospital and any complicated case is referred to KHMC.

Prior to the universal screening, the average age at which children were found to have a hearing loss was 2-3 years. Children with mild to moderate hearing loss were often not identified until 4 years of age.(5)

Retrospective studies of large universal newborn hearing screening programs have shown that permanent hearing loss is one of the most common abnormalities present at birth. (5)

In 1999, the American Academy Of Pediatrics stated that significant bilateral hearing loss has been shown to be present in approximately 1-3 per 1000 newborns in the well baby nursery population and in approximately 2-4 per 1000 infants in the intensive care unit population (5).

In our study the incidence is less.

Use of HRR (High Risk Register) as the primary indicator for screening of newborns for hearing loss was inadequate.

In 1995 Apuzzo found that infants identified when they were younger than 2 months had significantly higher language scores than those identified when they were older than 2 months, despite similar interventions in both groups (5) aids by the age of 6 months acquired age appropriate vocal communicative and linguistic skills well before children who were identified at a later age (5).

Neonatal hearing screening will not detect all cases of congenital hearing loss. It only provides an indication of the baby's hearing at the time of the screening, mild hearing losses and hearing losses outside the main speech frequencies may not be detected.(14)

A study done in Oregon health and science university showed that infants diagnosed to have significant hearing loss, who had no risk factors, varied from one-quarter to two-thirds. (15)

Conclusion

Hearing loss is very important to be diagnosed early for normal newborns and high risk infants. For normal speech development hearing impairment should be diagnosed before six months of age and therefore a hearing screening test is very important for all newborns.

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FINGERTIP INJURIES: SHOULD YOU HAVE A LOW THRESHOLD FOR MOVING TO THE OPERATING ROOM? TWO YEARS EXPERIENCE AT ROYAL REHABILITATION CENTER

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Abstract

Introduction: Fingertips are essential for normal hand function and appearance; they are the most sensitive part of the hand. Fingertip and nail injuries account for 45% of all hand injuries seen in the emergency room. Although they may appear minor, they can have serious implications because of the effect on so many activities; immediate repair by plastic or hand surgeon is preferable for the best outcome.

Objective: Analysis of fingertip injuries: age distribution and mechanisms of injury, with discussion about different surgical options and strategies of management obtain the best outcome.

Design: Retrospective study

Materials and methods: A total of 50 patients (56 fingers) who presented to the plastic surgery unit with fingertip injuries from April 2008 to May 2010 were included in this study. Five patients had more than one finger injured. Patients' ages ranged from 2-55 years; X-ray was requested in all patients; 12 patients were managed in the emergency room and the remaining 38 patients were managed in the theatre. Management options utilized were: primary closure, healing with secondary intention, skin grafts, composite grafts, advancement flaps and regional flaps.

Results: Patients' age ranged from 2-55 years; 60 % (30 patients) were under the age of 15 years; 31 patients were males (62%), 19 patients (38%) were females.

The most common mechanism of injury was crush injuries mainly by doors especially in pediatric age groups and falling of heavy objects account for 72% (36 patients).

The most common finger injured was the middle finger (30.3%), ring finger (25%), index finger (21.4%), followed by little finger (12.5%). The least common finger injured is the thumb (10.7%).

Local advancement flaps (volar V-Y, lateral V-Y) were used in 21 fingers; regional flaps were used in 3 fingers (2 cross finger flaps, 1 thenar flap).

Composite grafts of the amputated tip were used in 13 fingers, mainly in children below 6 years, with a success rate of 80%.

Skin grafts harvested from amputated part, hypothenar aspect of hand, and volar wrist skin were used in 6 fingers.

Primary closure was performed in 10 fingers, healing with secondary intention, 3 fingers.

Conclusion: Fingertip injuries are common and can have a great impact. Immediate repair by hand surgeon is preferable, and some injuries can be managed in the emergency room but with a low threshold for moving to the operating room when necessary. Local and regional flaps along with composite grafts in children, yield the best outcome, so patients are advised to always bring the amputated part with you.

Key words: fingertip, nail bed, skin grafts, composite grafts, advancement flaps.

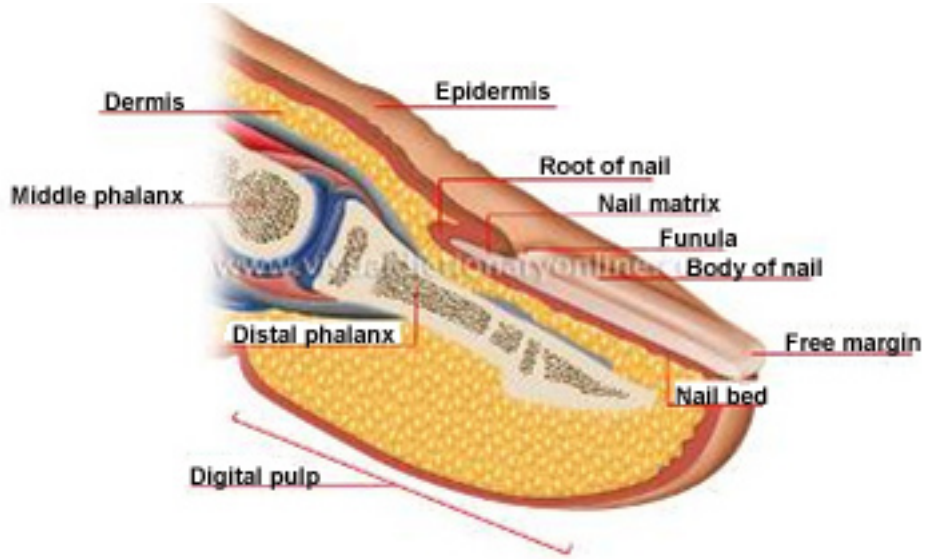

Figure 1:
Anatomy of the fingertip

Introduction

Fingertips are essential for normal hand function and appearance; they are the most sensitive part of the hand. Fingertip and nail injuries account for 45% of all hand injuries seen in the emergency room. Although they may appear minor, they can have serious implications because of the effect on so many activities. Immediate repair by plastic or hand surgeon is preferable for the best outcome.

In this retrospective study, our aim is analysis of fingertip injuries: age distribution and mechanisms of injury, with discussion about different surgical options and strategies of management to obtain the best outcome.

Materials and Methods

A total of 50 patients (56 fingers) who presented to the plastic surgery section with fingertip injuries from April 2008 to May 2010 were included in this study. 5 of the patients had more than one finger injured. Patients' ages ranged from 2-55 years. X-ray was requested in all patients. 12 patients were managed in the emergency room and the remaining 38 patients were managed in theatre.

In children mask anesthesia were used while digital nerve block was sufficient for adults. Finger tourniquet using a penrose drain and hemostat was used and under loupe magnification with good light source. After irrigation and debridement of clearly nonviable tissue, management was proceeded; pre and post operative photos were taken and patient follow up and dressings were done in the outpatient clinic.

Management options utilized were: primary closure, healing with secondary intention, skin grafts, composite grafts, advancement flaps and regional flaps.

Discussion

Injuries to fingertips may appear minor but can have a great impact and serious implications because of the effect on so many activities. Typically they may result in lost work and sometimes the end of a career.

Fingertip and nail injuries account for 45% of all hand injuries seen in the emergency room. Middle fingertip is the most common injury followed by the ring finger, and thumb tip injury is the least common. (1, 2, 3)

Everything distal to distal interphalangeal crease is considered the finger tip. The glabrous skin on the fingertip is specialized for pinch and grasp functions; the nail protects the distal phalanx and provides counterforce to the tip pulp. Figure 1 shows the anatomy of the fingertip. (4, 5)

Initial assessment of the patient should delineate: patient age, occupation, mental health, level of cooperativeness, smoking habits, which is the dominant hand, presence of other injuries, and the patient's expectations (may be unrealistic).

Assessment of injury site should delineate: mechanism and type of injury, level of the injury, is the injury on volar versus dorsal aspect, angle of the injury, involvement of nail and or nail bed and if the bone is exposed or not. (1, 3)

Goals for reconstruction should include: function, appearance, shortest time to functional recovery, prevention of joint contracture and neuromas, preservation of length and sensibility.

Immediate repair of injuries is preferable for the best outcome; repair can often be performed in the emergency room but with low threshold for moving to the operating room when necessary. (2, 3, 6)

Allen has classified fingertip injuries based on the level of injury, nail and bone. (See Figure 2 - next page)

o Type 1 injuries involve only the pulp.

o Type 2 injuries involve the pulp and the nail bed.

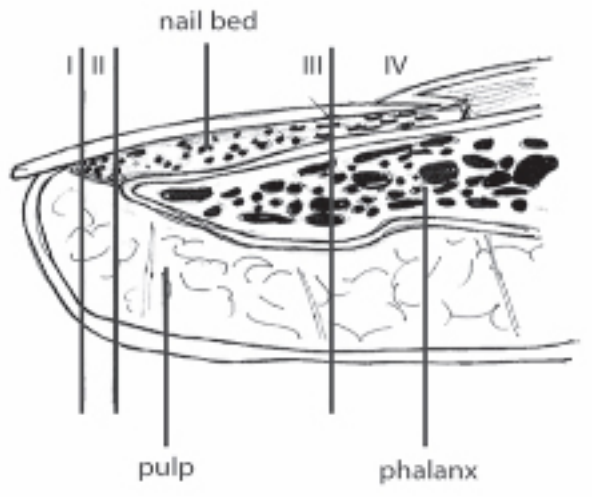

Figure 2: Allen classification system

o Type 3 injuries include partial loss of the distal phalanx.

o Type 4 injuries are proximal to the lunula.

Reconstructive options include: primary closure, secondary intention, skin grafts, local flaps, regional flaps, composite grafts and micro vascular reimplantation. (3, 7)

Nail injuries

Nail bed hematomas:

If less than 25% of surface of the nail in size, drain by lancing the nail with cautery or a heated paperclip end. If greater than 25%, remove the nail to repair the nail bed. (8)

Nail bed lacerations:

Use a Freer elevator or tenotomy scissors to separate the nail from the eponychium and underlying matrix, then set the nail aside in sterile saline and repair the nail bed with 6-0 or 7-0 absorbable suture material. Use precise, interrupted stitches under loupe magnification. Maintain the eponychial fold with a stent. One can use the trimmed nail if available, or other material such as the foil from a suture pack. This is usually considered helpful to prevent the formation of painful split nails. (9)

Avulsed nail bed:

If the bed is attached to nail, replace as an onlay graft. In case of missed nail bed, use a split-thickness nail bed graft from another nail to fill the defect (usually electively). (10, 11)

Primary closure:

Primary closure is an option only if tissue loss is minimal; otherwise, tight closures can limit function and cause pain.

Secondary intention:

It gives the best results in most cases. The injured part needs frequent dressing changes and antibiotic ointment to keep it moist and clean. Cold intolerance is common, however not worse than with other treatment options.

Skin grafts:

If used, the best alternative is a full-thickness skin graft (FTSG). The best donor site options include original skin (if salvageable, this skin should be aggressively trimmed of all fat and even some dermis), skin from ulnar/hypothenar aspect of hand (Figures 3, 4, 5 - opposite page), volar wrist skin and antecubital skin. Split-thickness skin grafts should not be used. (1, 2, 3, 7, 12, 13)

Local flaps

Lateral V-Y advancement flaps (Kutler flaps):

These are most useful for transverse amputations. Bilateral triangles are advanced and sutured to distal nail bed. The flaps can be advanced up to 5 mm if skin alone elevated or up to 14 mm if a neurovascular flap is elevated down to the level of the periosteum.

Disadvantages of Kutler flaps are scar at the tip which may be painful or insensate, and the vascular supply is sometimes unreliable. (14, 15)

Volar V-Y advancement flap (Atasoy-Kleinert flap):

These are most useful for dorsal oblique amputations. They are a triangular flap, with base design no wider than the nail bed. Skin incisions are through the dermis; deep aspect is dissected off the phalanx, advanced up to 10 mm with good survival (Figures 6, 7, 8 - opposite page).

Disadvantages include possible hypersensitivity or hook nail. (16, 17)

Volar neurovascular advancement flap (Moberg flap):

Best sensation preservation. Longitudinal incisions are made on both sides, dorsal to the neurovascular structures, so nerves and arteries are contained in the flap. Then the flap is advanced to cover the tip defect. This requires some joint flexion during healing; therefore, there is a high risk of flexion contracture. The Moberg flap is used mainly for the thumb tip, when padding and sensation are critical and some flexion contracture can be tolerated. (18)

Regional flap

Cross-finger flap:

The dorsal skin from one digit is transferred to the injured area of an adjacent digit as a pedicled flap; it can be used for volar or dorsal amputations. Pedicled flap needs delayed division, usually in 2 to 3 weeks. The donor site requires a skin graft. (19, 20)

Thenar flap:

The injured digit is flexed and tucked into the thenar area, and the palmar skin is used to cover the tip. The thenar flap requires 10-14 days of immobilization with the PIP joint in flexion (Figures 9, 10, 11, 12).

Figure 3: Fingertip amputation

Figure 4: FTSG applied over the defect

Figure 5: Hypothenar donor site closed primarily

Figure 6

Figure 7

Figures 6, 7 show volar V-Y flap elevation, advancement and inset

Figure 8: Flap after healing

Figure 9

Figure 10

Figures 9, 10 show amputated fingertip with thenar flap marking and elevation.

Figure 11: reconstruction of the injured digit with thenar flap

Figure 12: Fingertip after flap division and healing

Figure 13: Amputated fingertip

Figure 14 shows amputated part after defattining and debridement, with finger nail which is used as splint

Figure 15 shows composite graft used in reconstruction fingertip.

Figure 16 shows final result a few weeks later

Disadvantage includes PIP flexion contracture, and joint stiffness of recipient finger. Therefore, this is mostly used in children. (21)

Neurovascular island transfer flap (Littler flap):

This is used for insensate fingers following trauma to recreate sensitivity in the tip. This is usually reserved for thumb, index finger, or ulnar little finger. The practitioner must balance recipient sensation restoration with donor site loss. Flap pedicle is composed of digital vessels and nerve. it is typically raised from the ulnar aspect of the ring or middle finger; raised at the level of the flexor sheath. Donor site is closed either with graft or primarily. (22)

Composite graft:

Composite grafting has been shown to be successful in 43% to 80% of cases especially in children. Fingertips were replanted without any vascular anastomosis. Composite graft needs good defattining, debridement, strict elevation, and immobilization of the graft. (23) Success rate reached 80% in our study (see Figures 13, 14, 15, 16).

Microvascular reimplantation:

Possible options in some centers. Practice is somewhat controversial. Studies showed good outcomes with sensate tips. (24, 25)

Results

Patients age ranged from 2-55 years, 60 % (30 patients) were under the age of 15 years; 31 patients were

males (62%), 19 patients (38%) were females.

The most common mechanism of injury was crush injuries mainly with doors, especially in pediatric age groups and falling of heavy objects account for 72% (36 patients).

The most common finger injured is the middle finger (30.3%), ring finger (25%), index finger (21.4%), little finger (12.5%), the least common finger injured is the thumb (10.7%).

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Skin grafts harvested from amputated part, hypothenar aspect of hand, and volar wrist skin were used in 6 fingers. Primary closure was performed in 10 fingers; healing with secondary intention 3 fingers.

Conclusion

Fingertip injuries are common and can have a great impact. Immediate repair by a hand surgeon is preferable, and some injuries can be managed in the emergency room but with a low threshold for moving to the operating room when necessary. Local and regional flaps along with composite grafts in children yield the best outcome, so patients are advised to always bring the amputated part with you.

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PENDER'S HEALTH PROMOTION MODEL: AN INTEGRATIVE LITERATURE REVIEW

Abstract

Background: The Health Promotion Model (HPM) indicates that each person is a multidimensional holistic individual who continually interacts with both interpersonal and physical environments and emphasizes the active participation of the individual in the achievement of an improved healthy state. The HPM has been widely used to predict health-promoting behaviors in different populations.

Purpose: The purpose of this review was to examine how the HPM has been used in research studies.

Method: The main aim of literature search was to locate nursing studies that used or were guided by the HPM. An electronic computer search was conducted on the following databases: Medline, CINAHL, PsychoINFO, and British Nursing Index. The keywords used were Pender's and Health Promotion Model.

Results: Eleven studies were reviewed; most of them were quantitative studies. These studies discussed variables from the HPM and other models. Most of the study variables were measured using instruments derived from the HPM. The results of the reviewed studies revealed that the HPM has predicting value in speculating health-promoting behaviors although wide variations according to the setting and the populations were reported.

Conclusion: The HPM was widely accepted in the nursing community and was implemented in nursing practice, education, and research. In addition, it was used to guide studies that address health promotion in many countries.

Keywords: Pender's and Health Promotion Model

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Introduction

The original Health Promotion Model was developed by Pender in 1982. Many revisions, based on extensive research findings, were done for this model in 1987, 1996, and 2002 respectively. Pender's background in nursing, human development, education, social psychology, and Social Cognitive Theory has contributed to the theoretical sources of the HPM (Tomy and Alligood, 2006). The Health Promotion Model (HPM) provides a framework to examine influences on participation in health promoting behaviors and provides direction for effective interventions. The HPM illustrates that each person is a multidimensional holistic individual who continually interacts with both interpersonal and physical environments and emphasizes the active role of the individual in the achievement of an improved healthy state. The three major constructs for the HPM are individual characteristics and experiences, behavior-specific cognition and affect, and behavioral outcomes (Kwong and Kwan, 2007). HPM has been tested in different populations

and settings. Furthermore, it was widely accepted by the nursing community and is currently used in nursing practice, research and education (Tomy and Alligood, 2006).

Methods

Search strategy

The main aim of the search was to locate nursing studies that used or were guided by the HPM. An electronic computer search was conducted in the following data bases: Medline, CINAHL, PsychoINFO, and the British Nursing Index. The keywords used were Pender's and Health Promotion Model. After reviewing the abstract of the selected articles, eleven were retrieved for reviewing.

Inclusion criteria

Research articles were included in the review if they met the following criteria:

a. The article was published in a peer-reviewed nursing journal.

b. HPM was the conceptual framework or one of the conceptual frameworks that guided the study.

c. The article was research based.

d. Full text article was present.

e. Article was published in English language.

f. Articles published between 2002 and 2010

Overview of the reviewed studies

The electronic search revealed 37 articles; twenty six articles were excluded, because they were non research-based articles or were not published in a peer-reviewed nursing journal. The eleven research studies that met the inclusion criteria were retrieved and reviewed. Nine of the studies used quantitative research methodologies (Han et al. 2005; Kwong & Kwan 2007; Mendias and Paar 2007; Padula and Sullivan 2006; Parve 2004; Shin 2005; Walker et al (2009); Wilson 2005; and Wu and Pender 2002). One used qualitative methodology (Paula et al. 2002), and one study was secondary analysis (Ronis et al. 2006). Cross-sectional research design was the most commonly used design in the quantitative studies ((Han et al. 2005; Kwong & Kwan 2007; Mendias and Paar 2007; Padula and Sullivan 2006; Shin 2005; Wilson 2005; Wu & Pender 2002). One study used longitudinal design (Parve 2004). One study used a randomized clinical trial (Walker et al 2009). Interestingly, Pender participated in two of the reviewed studies; one study was done in Korea (Shin et al. 2005), and the other study was done in Taiwan (Wu et al. 2002).

The purposes of the reviewed studies

There were wide variations in the purposes of the reviewed studies. Generally, the purposes of these studies can be categorized into two main categories. The first category is the studies that described aspects of the HPM in different populations, while the second category is the studies that tested relationships either among different variables of HPM, or between selected HPM variables and other variables.

The first category included four studies. Parve (2004) described the factors in a family practice residency clinic that impacted the immunization compliance rates in children 12 to 24 months old. Paula et al. (2002) explored the specific health concerns and health-promotion behaviors of childbearing women 35 years of age or older. On the other hand, Wilson (2005) described sociodemographic and personal characteristics, health practices, and health-promoting behaviors in a population of sheltered homeless women. In the fourth study Padula and Sullivan (2006) Identified determinants of health promotion activities in older adults who were in long-term marriages in terms of relationship quality, perceived barriers, perceived self-efficacy, and social support. All these studies contributed to understanding the application of HPM in different populations.

The second category included seven studies. One study tested the HPM as a casual model of commitment to a plan of action for exercise among Korean adults with chronic illness (Shi et al. 2005). Kwong & Kwan (2007) tested the extent to which perceived self-efficacy, perceived benefits, and individual characteristics influenced perceived health among community-dwelling Chinese people. Another study examined the relationships among interpersonal influences, behavior specific cognition, competing demands, and physical activity among Taiwanese adolescents (Wu & Pender 2002). Moreover, Ronis et al. (2006) in their secondary analysis compared the predictive usefulness of the original and the revised structures of the HPM as applied to the use of hearing protection device. Furthermore, Mendias and Paar (2007) tried to explore perceived health and self-care learning needs, barriers, and preferred learning modalities of outpatients with HIV/AIDS. While Walker et al (2009) studied the effect of two intervention approaches on physical activity and healthy eating among rural women based on the Health Promotion Model. All these studies tested relationships among different variables of the HPM. On the other hand, Han et al. (2005) used HPM to estimate the Quality of Life (QOL) of patients with chronic cardiovascular disease (CCVD). Those studies revealed that testing relationships among different variables of the HPM will enhance the predictive ability of this model in predicting the health-promoting behaviors.

Sample of populations

Different samples and populations were used in the reviewed studies. The sample in Kwong & Kwan (2007) was 896 community-dwelling older Chinese people. Ronis et al. (2006) recruited a sample of 703 of workers who are exposed to high noise. Han et al. (2005) used a sample of 436 adults with chronic cardiovascular disease. While Shin et al. (2005) used a sample of 403 adults over 18 years of age. Wilson (2005) used a sample of 137 homeless women. Parve (2004) used a sample of

parents of 30 children. Paula (2002) used a sample of 50 pregnant women over the age of 35. Mendias and Paar (2007) used a convenience sampling design to recruit 156 outpatients with HIV/AIDS sample was recruited from all patients attending clinic for routine care in the Southwest Texas, USA. In another study Padula and Sullivan (2006) used a sample of 80 husbands in long-term marriages recruited at suburban and rural community centers. While Walker et al (2009) used random sampling technique to recruit 225 participants from two similar rural areas, with similar demographic profiles.

Finally, Wu & Pender (2002) recruited a sample of 977 eighth-grade students, with age ranged from 12 to 15 years. It can be noticed that researchers used wide range of populations with different sample sizes in different settings. Using such different populations and settings indicated that the HPM is applicable and highly generalizable. Furthermore, testing this model by Pender and other researchers will enhance the empirical precision of it.

The Key Variables

Many variables and concepts have been thoroughly discussed in the reviewed studies. Most of these variables are components of the HPM. Some studies discussed one or two variables. For instance, Wilson (2005) described the health-promoting behavior in homeless women, and Parve (2004) studied the immunization compliance and the barriers to immunization in children 12 to 24 months old. On the other hand, the remaining studies discussed more than two variables. The most commonly discussed variables were: health-promoting behaviors, commitment to plan of action, perceived benefits to action, perceived barriers to action, self-efficacy, social support, health perception, self-esteem, related affect, preferences, prior experience of exercise, options for exercise, individual characteristics, and competing demands (Han et al. 2005; Kwong & Kwan 2007; Mendias and Paar 2007; Padula and Sullivan 2006; Ronis 2006; Shin 2005; Walker et al 2009; Wu & Pender 2002). Moreover, one study estimated the relationship between variables of the HPM and Quality of Life (QOL) (Han et al. 2005). Testing of relationships among variables of the HPM or with other variables in different settings and using various populations is very important in exploring and validating the relationships and will enhance the predictive value of the HPM.

Data Collection Methods

Self report method was used in all of the studies as a data collection method. Specifically, self administered questionnaires were used in most of the reviewed studies (Han et al. 2005; Kwong & Kwan 2007; Mendias and Paar 2007; Padula and Sullivan 2006; Shin 2005; Wilson 2005; Wu & Pender 2002). Paula et al. (2002) and Parve (2004) used interview for data collection. However, Walker et al 2009 used several techniques to collect data such as self reported questionnaire, observation, lab tests, and measuring blood pressure.

Measuring Instruments

Many instruments were used for data collection. The review of these studies revealed that many of the research instruments used were derived from the HPM. Some studies used more than one instrument. For the purpose of measuring the key study variables Han et al. (2005) used many instruments. These instruments included Pender's Health-Promoting Behavior Scale, Pender's Commitment to a Plan of Action Scale, Pender's Perceived Benefits Scale, Pender's Perceived Barriers to Action Scale, and Pender's Preference Scale. All used instruments are presented in appendix A.

Results

The reviewed studies examined HPM in different settings, populations, and circumstances. So, the results of each study are relatively unique and can be generalized to people who share the same characteristics of the study population.

Han et al. (2005) found that Health-promoting behaviors and self-esteem were found to have a significant direct effect on QOL. Health perception, self-esteem, perceived barriers to action and preferences were found to have indirect effect on QOL. Additionally, the variables of HPM explained 63% of the variance in QOL. In another study by Shin et al. (2005) showed that, the HPM model accounted for 54% of the variance in commitment to a plan for exercise. Prior experience with exercise and exercise benefits were highly related. Health professionals can assess prior experience and emphasize personally relevant benefits of exercise in designing intervention programs to help Korean adults with chronic disease to become more physically active. Moreover, the results showed that prior experience with exercise directly and indirectly influenced commitment to a plan for exercise. Two behavior-specific cognitions (exercise benefits and exercise barriers) directly influenced commitment to a plan for exercise. The results also showed that there were direct and indirect effects of self-efficacy, exercise, social support, and exercise on commitment to a plan for exercise. In addition, perceived health status and options for exercise indirectly influenced commitment to a plan for exercise.

In another study, Wu & Pender (2002) found that cognition variables, perceived self-efficacy, perceived benefits, and perceived barriers, were significantly related to physical activity among Taiwanese adolescents with positive associations found between physical activity and perceived self-efficacy and perceived benefits and a negative association found between physical activity and perceived barriers. Interpersonal influences, social support, modeling, and norms were all found to be significantly related to increased physical activity. The results from structural equation

modeling indicated that perceived self-efficacy was the most important predictor of physical activity. Interpersonal influences, when considered in total, had a weak and non significant direct effect on physical activity but had indirect effects on physical activity through perceived benefits and perceived self-efficacy.

In another similar study, Kwong & Kwan (2007) found that perceived self-efficacy and perceived benefits were positively related to health-promoting behavior, while perceived self-efficacy was positively related to perceived benefits. There were significant differences in perceived self-efficacy and health-promoting behavior between men and women. Kwong & Kwan (2007) also indicated that female participants with greater perceived self-efficacy and perceived benefits tended to engage in health-promoting more frequently. These statistically significant factors explained 38.4% of the total variance for health-promoting behavior. Additionally, fatigue during and after physical activity, enjoyment of unhealthy foods and inadequate family and peer support were the most frequently reported barriers to health-promoting behavior.

In a group of childbearing women 35 years of age or older, Paula et al. (2004) indicated that many health promotion activities were adopted by women. These activities include increasing daily water intake, decreasing caffeine consumption, eliminating alcohol and smoking, avoiding over-the-counter drugs, routinely monitoring weight gain patterns, and taking folic acid during the preconceptual period. Alteration in daily activities was cited by 37 (74%) women.

In another group of sheltered homeless women, Wilson (2005) found that the majority (70.8%) identified a high level of perceived health status. The most frequently identified barriers to health care were money (63.5%) and transportation (32.1%). Dental and vision care were identified as the greatest unmet needs. Descriptive analyses of the Health-Promoting Lifestyle Profile II (HPLP II) revealed that physical activity and nutrition were the lowest score in practicing health promoting behaviors. Health status was significantly negatively correlated with HPLP II total score, and the subscales of nutrition, spiritual growth, and stress management.

In a Sample of 80 individuals in long-term marriages, Padula and Sullivan (2006) found that participation in health promotion behaviors related to four predictor variables: relationship quality, perceived barriers, perceived self-efficacy, and social support.

In another study based on HPM, Walker et al (2009) found that women had significant improvement on cardio-respiratory fitness, weekly stretching exercise, weekly strength exercise, flexibility, and lower body strength when they followed mailed physical and nutritional instructions.

Mendias and Paar (2007), in their study indicated that the majority of respondents were interested in learning about many topics such as: being healthy, coping with fatigue, and coping with stress and depression. Furthermore, they found that, 93% of respondents indicated barriers to participate in learning activities such as: distance to the clinic, travel or supply costs, confidentiality, class hours, transportation, and not feeling well enough to attend.

Parve (2004) indicated that 30% of the children whose parents were surveyed were not up-to-date on their immunizations on the first schedule. Because the compliance rate was so low, many interventions were quickly implemented to improve compliance. The most common barrier was found to be transportation. After implementing the intervention; the immunization compliance increased to 97% at 12 months, and 87% at 24 months.

In a secondary analysis study, Ronis et al. (2006) found that the original HPM model accounted for 18% of the variance in use of hearing protection devices. While the revised HPM model accounted for 28% of the variance in use of hearing protection devices. The results of this study show that the revised HPM has more predictive ability in predicting the health-promoting behaviors.

Conclusion

The HPM has become widespread in recent years and might be useful in understanding health behavior. Such integrated review showed that HPM is applicable in different nursing situations. Support for the HPM determinants as direct or indirect influences on health behaviors has been demonstrated in this paper.

Such review paper proves that HPM provides a framework within which to begin to understand the factors and variables that influence the initiation of healthy behaviors in different settings with various populations. This paper reveals that the effective use of research-based evidence in nursing practice and policy requires an integrated review such as that presented in this paper.

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Appendix: Results starting next page

(References continued page 22)

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
Han, K., Lee, S., Park., E., and Cheol, K., (2005)	To estimate a structural model to represent the QOL of patients with Chronic cardiovascular Disease CCVD, on the basis of a literature review and Pender's health promotion model (HPM).	None Experimental, Cross-sectional design	Quality of life, Health Promoting behavior, Commitment to plan of action, perceived benefits, Perceived Barriers to Action, Self-Efficacy, Social Support, Health Perception, Self-Esteem, Related Affect, And Preferences	Quality of Life- Ro's QOL scale(1988) ,Health-Promoting Behavior- Pender's scale, Commitment to a Plan of Action- Pender's Scale(1999) ,Perceived Benefits of Action- Pender scale (1996), Perceived barriers to action- Pender scale (1996), Self-Efficacy- the Sherer and Maddax (1982) Social Support- Park scale (1985), Health Perception - the health perception scale (Ware, 1976) Self-Esteem- the Rosenberg scale (1965),Activity-Related Affect- the McAuley and Courneya scale (1992), Preference- the Pender scale (1999)	436 adult outpatients at a university hospital in Korea	Health-promoting behaviors and self-esteem were found to have a significant direct effect on QOL. Health perception, self-esteem, perceived barriers to action and preferences were found to have indirect effect on QOL. Additionally, The variables of this model explained 63% of the variance in QOL
Parve., J. (2004)	To determine what factors in a family practice residency clinic impacted the immunization compliance rates in children 12 to 24 months old and to know what interventions were needed to increase	Longitudinal design	Immunization compliance, and Barriers to immunization	Survey Questionnaire to asses Immunization Compliance and to asses barriers	Parents of 30 Children	30% of the children whose parents were surveyed were not up-to-date on their immunizations on the first schedule Because the compliance rate was so low, many interventions were quickly implemented to improve compliance. Most common barrier was found to be transportation. After implementing the intervention; the immunization

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
	the immunization coverage rate from 38% to 80% at 24 months					compliance increased to 97% at 12 months, and 87% at 24 months
Wilson, M (2005)	To describe sociodemographic and personal characteristics, health practices, and health-promoting behaviors in a population of sheltered homeless women	A descriptive, cross-sectional, and none experimental design	Health Promoting Behaviors	Health-Promoting Lifestyle Profile II (HPLP II) (Pender, Murdaugh and Parsons 2002)	137 homeless women	78% of the sample had more than high school education; the majority (70.8%) identified a high level of perceived health. Barriers to health care were diverse with money (63.5%) and transportation (32.1%) most frequently identified. Dental and vision care were identified as the greatest unmet needs. Approximately 50% had not received these health care services in over two year Physical activity and nutrition were the lowest health status
Shin, Y., Yun, S., Pender, N. P., and Jang, H. (2005)	To test the HPM as a causal model of commitment to a plan for exercise among Korean adults with chronic illness	Cross-sectional	prior experience of exercise, perceived health status, exercise benefits, exercise barriers, exercise self-efficacy, social support for exercise, and options for exercise)	1. Prior related behavior was measured on a 3-point rating scale ranging from never exercised (1), exercised intermittently (2), to exercised regularly (3) 2. Perceived health status was measured by the Health Perception Questionnaire (Ware, 1976),	Convenience sample of 403 adults over 18 years of age was recruited from hospitals or health centers in Korea,	HPM accounted for 54% of the variance in commitment to a plan for exercise Prior experience with exercise directly and indirectly influenced commitment to a plan for exercise. Two behavior-specific cognitions (exercise benefits and exercise barriers) directly influenced commitment to a plan for

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
				3. Exercise Benefits and Barriers Scale (Sechrist, Walker, & Pender, 1987) 4. Shin, Jang, and Pender (2001) psychometrically evaluated the Exercise Self-Efficacy Scale (Bandura, 1997) 5. The Exercise Social Support Scale (Pender,1998a) 6. Options for exercise were assessed by the 10- item options scale (Pender, 1998b) 7. Commitment to a Plan for Exercise Scale (Pender, 1996		exercise. There were direct and indirect effects of self-efficacy, exercise social support, and exercise on commitment to a plan for exercise. Perceived health status and options for exercise indirectly influenced commitment to a plan for exercise,
Ronis, D., Hong, Z., and Lusk. S., (2006)	To compare the fit and predictive usefulness of the original and revised structures of the HPM as applied to the use of hearing protection devices.	Secondary analysis	Original and Revised HPM	1. Questionnaires about use of hearing protection. 2. Workers self-report of the use of hearing protection. 3. Interpersonal influences. 4.situational factors/influences 5. Health Competence Scale (Smith, Watson, and Smith 1995). 6. Laffery (1986) Health Concept Scale. 7. Perceived Hearing health status. 8. Perceived self-efficacy 9. Perceived benefits 10. Perceived barriers	703 of workers who are exposed to high noise.	The original HPM model accounted for 18% of the variance in use of hearing protection. While the revised HPM model accounted for 28% of the variance in use of hearing protection

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
Paula A., Padula C., and Eddy B. (2002)	To explore the specific health concerns and health-promotion behaviors of childbearing women 35 years of age or older	Explorative Qualitative	health concerns, and actual and potential health-promotion behaviors associated with pregnancy	Semi-structured interview	A convenience sample of pregnant women (N = 50) over age of 35 years	Many health promotion activities were adopted by the women, these activities included increasing daily water intake, decreasing caffeine consumption, eliminating alcohol and smoking, avoiding over-the-counter drugs, routinely monitoring weight gain patterns, and taking folic acid during the preconceptual period Alteration in daily activities was cited by 37 (74%) women.
Kwong E., and Kwan., A., (2007)	1- To test the extent to which perceived self-efficacy, perceived benefits and individual characteristics (age, sex, marital status, education and perceived health) that influenced perceived health among community-dwelling older Chinese people in Hong Kong. 2- To identify their barriers to health-promoting behaviours.	Cross-sectional, correlational design	Perceived self-efficacy, perceived benefits and individual characteristics , perceived health, and perceived health	1. A demographic inventory (DI) 2. The health-promoting behavior scale (HPBS) 3. The health-promoting behavior self-efficacy scale (HPBSES) 4. The health-promoting behavior benefit scale (HPBBS)	A convenience sample of 896 community-dwelling older Chinese people in Hong Kong aged between the ages of 60 and 98	Perceived self-efficacy and perceived benefits were positively related to health-promoting behavior, while perceived self-efficacy was positively related to perceive Benefits. There were significant differences in perceived self-efficacy and health-promoting behaviour between men and women. Female participants with greater perceived self-efficacy and perceived benefits tended to engage in health-promoting more frequently These statistically significant factors explained 38.4% of the total variance for health-promoting behaviour

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
						Fatigue during and after physical activity, enjoyment of unhealthy foods and inadequate family and peer support were the most frequently reported barriers to health-promoting behaviour.
Wu, T., and Pender, N., (2002)	To examine the relationships among interpersonal influences, behavior specific cognition, competing demands, and physical activity among Taiwanese adolescents.		Interpersonal influences (i.e., social support, norms, modeling) behavior specific cognition (i.e., self-efficacy, perceived benefits/barriers) competing demands , and physical activity	1. Self-efficacy. perceived self-efficacy subscale 2. Perceived barriers (Pender, 1996) 3. Perceived benefits Pender, 1996) 4. Competing demands. Pender, 1996) 5. Social support. by The social support subscale, adopted from the Child/Adolescent Exercise Social Support Scale (Garcia et al., 1995) 6. Modeling. by adopted from the Child/Adolescent Exercise Modeling Scale (Garcia et al., 1995), 7. The eight-item Children's Exercise Social Norms Scale (Garcia et al., 1995) 8. Physical activity by the Child/Adolescent Activity Log (CAAL)	A convenience sample of 977 eighth-grade students, the age of these students ranged from 12 to 15 years	• The cognition variables, perceived self-efficacy, perceived benefits, and perceived barriers, were significantly related to physical activity among these Taiwanese adolescents, with positive associations found between physical activity and perceived self-efficacy and perceived benefits and a negative association found between physical activity and perceived barriers. • Interpersonal influences, social support, modeling, and norms were all found to be significantly related to increased physical activity, • The results from structural equation modeling indicated that perceived self-efficacy was the most important predictor of

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
						physical activity. Interpersonal influences, when considered in total, had a weak and non significant direct effect on physical activity but had indirect effects on physical activity through perceived benefits and perceived self-efficacy.
Mendias E., & Paar D. (2007)	To examine perceptions of patients with HIV/AIDS for self-care learning needs and interests, barriers to learning, and preferred learning modalities.	Descriptive exploratory design	The health and self-care learning needs, barriers to learning, and preferred learning modalities.	A researcher- designed self-report survey.	151 subjects participated in the study. Most were males (78.2%),	97% of subjects (147 persons) were interested in learning about being or staying healthy. Only 15 subjects indicated no perceived barriers to participation in learning activities. Many subjects indicated multiple preferred teaching modalities.
Padula, C. & Sullivan M (2006)	To identify determinants of health promotion activities in older adults who were in long-term marriages	Correlational study	Perceived barriers to health promotion, perceived self-efficacy, social support, and relationship quality and of health promoting behaviors.	Demographic data; Barriers to Health Promoting Activities Scale (Becker, Stuifbergen, & Sands, 1991; Stuifbergen, Becker, & Sands, 1990); Self-Rated Abilities for Health Practices ((Becker, Stuifbergen, Oh, & Hall, 1993); Social Relationship Scale (McFarlane, Neale, Norman, Roy, & Streiner, 1981); Quality of	A convenience sample of 80 individuals in long-term marriages	Regression analysis identified four predictor variables as explaining 31% of the participation in health promotion behaviors: relationship quality, perceived barriers, perceived self-efficacy, and social support.

Appendix A: Studies guided by Pender's Health Promotion Model (n=11)

Citation	Purpose	Design	Key Variables	Instrument	Study Population And Sample	Results
Walker et al (2009)	To compare a tailored intervention based on the Health Promotion Model with a generic intervention to increase physical activity and healthy eating among rural women	A community-based clinical trial using a repeated-measures experimental comparison group design	Tailored Activity and eating Newsletters.	Marriage Index (Norton, 1983); and Health-Promotion Activities of Older Adults (Padula, 1997a). The Modified 7-Day Activity Recall (Hellman, Williams, & Thalken, 1996/1997). the Web-based version of the 1998 Block Health Habits and History Questionnaire ((Boeckner, Pullen, Walker, Abbott, & Block, 2002). Systolic and diastolic blood pressure were measured before physical activity testing, using a calibrated mercury sphygmomanometer and following standardized auscultatory methods (ACSM, 2006).	225 women (115 in the experimental group and 110 in the control group) age ranged from 60 to 69 years.	Both Mailed computer-tailored and generic print newsletters facilitated the adoption of increased stretching and strengthening exercise and fruit and vegetable servings and decreased percentage of calories from fat over 6 months. Tailored newsletters were more efficacious in facilitating change over 12 months.

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MANAGEMENT OF DIABETIC FOOT ULCERS FROM PREVENTION TO TREATMENT

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Abstract

Diabetic foot ulcer is the lesion that involves skin break with loss of the epithelium and may extend to deep tissues. It is a common problem in diabetes and has numerous social, economic and medical impacts, affecting the patient, families and health care system. It is closely associated with diabetic maculopathy, foot deformities, decreased skin oxygenation and greater body mass. It increases morbidity in diabetics, characterized by a prolonged course of treatment and frequent hospital admissions. Due to the long course of care the cost management will also increase. The incidence of diabetic foot ulcer is high; 15% of diabetics can develop foot ulcers during their lives and 14% to 24% of them can face lower limb extremities amputation. It is the leading cause of non-traumatic amputations of lower extremities.

Pathophysiology

Diabetic neuropathy affects all types of nerves. In the foot the damage to sensory nerves leads to loss of sensations, and reduces awareness of physical injuries. Anhydrosis secondary to autonomic neuropathy causes dry skin which makes the skin liable to cracks and fractures and callus formation. These become sites of entry for organisms resulting in superficial infections.

Macrovascular complications in diabetes lead to arteriosclerosis and vascular insufficiency in peripheral arterial vessels. The diabetic patients have more severe disease and poor outcomes, compared to the non-diabetic.

The weakness of intrinsic foot muscles secondary to motor neuropathy can alter normal body weight distribution. The result of imbalance and misdistribution of weight of the body and postural instability, result in multiple foot deformities, bunions, hammer toes and callus. These focal pressure points with contribution of loss of sensation and decreased blood supply enhance the development of plantar ulcers. Infections are common problems in diabetics. The infections of foot take the form of cellulites, soft tissue necrosis and osteomyolitis with draining sinus.

Detection, evaluation and screening of risk factors

Detection, evaluation and controlling the risk factors of diabetic foot ulcer are fundamental for proper prevention. The duration of the diabetes and level of glycaemic control remains the major contributing factors in development of complications; other factors include increased mechanical pressure, previous ulcer and foot deformities. Precipitating factors are many. See information Box 1.

RISK FACTORS

1-Peripheral neuropathy .

2-Increased mechanical pressure, bony deformity.

3-History of previous ulcer or amputation

Box 1

Detection and screening for risk factors can be done at two levels, at primary level and secondary level. This should be done on diagnosis of type 2 diabetes and at annual reviews.

PRECIPITATING FACTORS

1-Friction in ill-fitting or new shoes.

2-Untreated callus.

3-Self treated callus.

4-Foot injuries.

5-Self inflicted foot lesions (rare).

6-Heel friction in patient confined to bed.

Box 2

NICE RISK FACTOR CATEGORIZATION

1-Low current risk. (Normal sensations and palpable pulses)

2-Increased risk. (Neuropathy or absent pulses, or other risk factors)

3-High risk. (Neuropathy +absent pulses +deformity+ skin changes, +previous ulcer)

4-Ulcer present.

For proper evaluation and arranging appropriate foot care the diabetic patients should be categorized in groups regarding the level of their risk factors. Using a screening chart for evaluation can facilitate the procedure; a simple and complete chart modified by ACFAS is available. Another simple easy screening sheet can be obtained from the website of the international consensus on the diabetic foot.

The evaluation and assessment of risk factors includes the following:

A-Subjective evaluation

Detailed history should be obtained including the duration of the disease, degree of glycemic control, medications, and history of previous diabetic complications including foot ulcer, family history of diabetic complications, insulin resistance, smoking and hyperlipidemia.

B-Vascular evaluation

History of any symptoms and signs of ischeamia, including history of claudication.

Inspection for atrophic changes, colour and temperature of the skin. Inspection of the heel and between toes for ischaemic changes.

1-Assessment of chronic leg ischemia

This can done using Fontaine's classification; which is composed of 4 stages. Patient with claudication on routine visit should be referred for vascular assessment.

2-Palpation and Detection of Pulses

For detection of pulses in the lower limb for sites, femoral, Popliteal, posterior Tibial and Dorsalis Pedis are clinically important; the pulse at each site should be recorded as follows:

Normal=+, Reduced=+ Absent= _ and aneurysmal=++.

3-Measurement of Ankle: Brachial Pressure Index (ABPI)

Measurement of ABPI using Doppler and sphygmomanometer is simple non invasive investigation, the value <0.6 indicates severe ischaemia, <0.9 indicates ischeamia, >1.0 is normal, while values >1.2 means calcified vessel.

4-Angiography

Using contrast material for detection of vascular occlusion is a valuable diagnostic technique. Special precaution should be taken in diabetics regarding renal functions and hydration of the patient.

C-Neurological evaluation

Neurological examination is important in screening; evaluation and assessment of plantar foot ulcer risk factors. This includes detection of sensations, vibration and reflexes. Sensation should include touch, position and pain; it is better assessed using a (10gm) microfilament. It is a cheap and simple technique. Vibration sense can be assessed using a 128HZ tuning fork over medial malleolus; perception for <5 seconds indicates impaired sensation. It is less detected in people above 70 years.

D-Dermatological evalution

This includes examination of foot for presence of oedema, skin texture, dystrophic nails, chronic tineasis, macerations, , corn and callus.

E-Musculoskelatal evaluation

Foot deformities and joint mobility assessment includes digital contracture, mid foot deformity.

The joints should be assessed for mobility, and presence of deformities including Charcot arthropathy. Radiological examination helps in the diagnosis of the condition.

Gait evaluation includes range of motion; biomechanical assessment should be done for better diagnosis of the deformity.

Footwear assessment includes checking the fitness of the shoes, soles and presence of any pressure points.

Management of Diabetic foot ulcer

Management of diabetic foot ulcer according to the guidelines has good outcomes and is cost-effective. A multidisciplinary team of professionals should be available to provide appropriate foot care. An endocrinologist or diabetologist should lead this team. A suitable setting is essential in management of diabetic foot ulcer. This should be a diabetes center or well-equipped diabetes clinic with good communications facilities and recall system.

Initial Assessment and Management of Acute Ulcer

Initial management of acute or chronic ulcer needs careful clinical evaluation. With the possibility of admission and surgical debridement in the case of acute ulcer the following measures should be implemented:

1-Assessment of general condition of the patient

Including vital signs, well-being and nutritional status. Checking blood

glucose, Hb Ac-1, complete blood picture, urea and electrolytes. Urine analysis for protein, sugar and ketones.

2-Ulcer Examination and classification

The ulcer should be examined for type, site, size, depth, presence of dead tissues and deeply sited infections. The proper way to assess the ulcer is using one of the clinical classifications available; this can define the ulcer according to strict criteria. In clinical practice two classifications are used commonly, Wagner Classification and Texas University Classification. The Wagner Classification is a grading system. The TU classification is a stage and grading system. This can make it a better predictor for outcomes. Radiological examinations including plain X-ray of the foot and CT scan to locate deep infections if necessary.

3-Surgical Debridement

Surgical debridement for necrotic tissue should be done followed by proper dressing.

4-Control of Blood sugar

Aggressive glycaemic control is essential in management of foot ulcer. Controlling by insulin achieves better outcomes in presence of infections.

5-Control of infections

Infection is major factor in developing foot ulcer and its complications. Deep tissue culture swab is mandatory in the diagnosis and they provide reliable bacteriological information. Empirical treatment should be started till culture and sensitivity test obtained. The infections in diabetic foot disease are categorized as:

Non-limb threatening infections

Usually superficial with lack of systemic toxicity, minimal cellulites extending less than 2 cm and lacking significant ischemia. The common organisms are staph. aureus and facultative streptococci group. Orally we can use clinamycin, cephalexin cloxacillin, and parenterally cefazolin, or nafcillin.

Texas University Classification

Stages:

A	No infection or ischemia
B	Infection present
C	Ischemia present
D	Infection and ischemia present

Grades:

1	Epithelialized wound
2	Superficial wound
3	Wound penetrates to tendon or capsule
4	Wound penetrates to bone or joint

Key messages

Control blood sugar
Daily care is essential
Debridement is essential
Avoid tissue-killing materials
Treat infections
Offloading

Limb threatening infections

Associated with more extensive cellulites, deep ulcer, lymphangitis, and prominent toxemia. Infection is commonly polymicrobial. It is a serious condition and can lead to a major amputation if not treated carefully. Orally we can use Clindamycin Plus ciprofloxacin and parenterally Clindamycin plus third generation cephalosporin.

The management of chronic ulcer

For patients with chronic ulcers who are in daily care in the primary setting or diabetes center; and who are usually aware of the problem, the following intervention is needed if an ulcer with swelling and redness of foot occurs:

1-Evaluation by the doctor, preferred by surgeon.

2-Bed rest and foot elevation.

3-Radiological examination to rule out the possibility of osteomyelitis and presence of gases.

4-Debridement of dead tissues, drainage of deep infections and dressing with normal saline.

5-Intravenous antibiotics.

6-Controlling blood sugar by insulin.

Ulcer care

1-Daily care and dressing

The ulcer should be kept moist. This can be achieved by cleaning the ulcer with normal saline, drying after washing and we should avoid cell killing material for example iodine and hydrogen peroxide. Outer packing should not be tight and plain gauze or allevyn can be used. Special dressings can be used according to the assessment of the ulcer.

2-Coverage of the ulcer

This should be done on a clean wound. Many factors affect the decision and option for coverage of the ulcer, the site, depth of the wound. The options are secondary tension, skin graft, local fasciocutaneous flap or free flaps.

3-Orthopedic and Orthotics care

The objective of this care is to relieve areas of excessive pressure, reducing the shock or vertical pressure, stabilizing and supporting deformities and limiting motion of joints. These objectives can be achieved by prescription footwear. Applying a cast to relieve pressure from the ulcer, has been shown to accelerate the healing process. Managing Charcot's foot in acute and chronic stage is important to prevent further complications. The special footwear for diabetics includes:

1-Healing shoes which are modified to relieve pressure.

2-In depth shoes are athletic shoes with simple modifications.

3-External shoe modification.

4-Removeable orthosis or inserts for insole, pre-made and custom made, can be used to absorb the shocks.

5-Custom made shoes are designed to stabilize severe deformities.

Delayed healing ulcer

Many factors contribute to wound healing, including poor metabolic control, inadequate oxygenation and perfusion, infections, and malnutrition status. Once these factors are managed and if the wound is still not healing we should exclude malignancy and try other interactive wound therapy.

Topical growth factors

Topical growth factor is used successfully in treating delayed healing wounds; it stimulates the healing process. Proteases which are modulating matrix collagen, and oxidized regenerated cellulose, promote wound healing by removing the barriers to healing.

Topical negative pressure

Applying negative pressure, electronically adjusted, has been shown to improve the circulation, decrease the bacterial load and stimulate new tissue formation. A special machine is used for vacuum assisted closure (VAC.KCL).

Hyerbaric oxygen therapy

In chronic wounds and especially in diabetic foot many factors alter wound healing, including infection low oxygen supply and perfusion. Hyperbaric oxygen therapy has shown improvement in healing of chronic wounds; it has been shown to improve the white cell function, increase collagen sympathies, promote angiogenesis, killing some anaerobes, and reducing leucocytes adhesion.

Prevention

Effective prevention methods have been found to decrease the incidence of diabetic foot ulcer and recurrence, these include:

Education of society

Increase the awareness of the society to nutritional problems, obesity and diabetes and their complications.

Education of the patient

1- Regular checkup.

Diabetic foot educators should instruct patients regarding the effect of diabetes on their nerves and feet. The patient should be encourage to attend regular check ups.

2- Metabolic control

Advice includes, decreasing weight and exercise, cessation of smoking, tight control of glucose and blood pressure.

3- Basic advice for foot care

1-Never walk barefoot.

2-Daily check up.

3-Cleaning of feet daily with mild soap and warm water with drying by clean dry towels. The patient should check water temperature with their hand before use.

4-Use quality lotion to keep the skin of feet soft and moist. It should not be used between toes. Also avoid greasy preparations.

5-Proper cutting of nails.

6-The feet should kept warm in winter. Socks should be loose and dry, and they should be changed daily.

4- Basic advice regarding footwear

Diabetic foot educators should instruct the patients regarding appropriate shoes with good design and planned by biomechanics and orthotics specialists.

Patients should be advised to:

1- Choose shoes carefully, check how they fit in width, be comfortable, check the sole and avoid tight and pointed styles. New shoes should not be used for more than 2 hours.

2- Buy shoes late in the evening when the feet are larger.

3-Socks should be loose, clean and dry. They should be changed daily.

Education of health providers

Teaching the staff, doctors and nurses, who will look after the diabetic clinic is essential in decreasing the prevalence of diabetic foot. They should receive periodic education.

They should have:

1-Full knowledge about diabetes and diabetic foot ulcer and foot care, with a good approach to the patient.

2-Capability of proper assessment of neurological and vascular status of the patient, feeling pulses and using microfilaments.

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MOTHERS' SATISFACTION TOWARDS PEDIATRIC NURSING CARE: FAMILY CENTERED CARE INITIATIVE

Abstract

AIM OF THE STUDY

To assess mothers' satisfaction level with pediatric health care at the Pediatric Unit (PU) at a Pediatric and Maternity Hospital, Al-Mafraq, Jordan.

METHODOLOGY

Study Design:

This study was a descriptive/ correlation survey conducted in the Pediatric unit of the Pediatric and Maternity Hospital, Al-Mafraq, Jordan

Study Setting:

The catchments area of the hospital is about 100,000 persons. The hospital is a public institution providing general maternal and child care. The Pediatric Unit is 43-bedded with a 98% occupancy rate. The unit is staffed by eight registered nurses and ten practical nurses working in a relatively fixed nurse-to-patient ratio, i.e., 1:7 in the morning shift, and 1:15 or more in the evening and night shifts (i.e. regardless of the child's dependency state).

Study Population:

A convenience sample of 292 mothers who accompanied their children admitted to the PU were invited to participate in the study which was conducted over the period of 6 months (from 10 January 2010 to 17 July 2010). For those mothers who agreed to participate in the study, their level of satisfaction with nursing care provided was investigated. Some demographic attributes and the medico administrative profile of the studied mothers and their children were identified.

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Introduction

Pediatric care in Jordan, like other developing countries, is proceeding in stumbled steps toward a philosophy of Family Centered Care (FCC), because adequate attention has not been given to the parents needs, and most of the time the needs of parents are not sufficiently evaluated by health care professionals, who frequently neglect to stress the singularity of the parental role and to include them in the health system care plan.

Family Centered Care, which has become central to the delivery of pediatric nursing practice in the 21st century (Newton,2000), is grounded on several principles that revolve around the central belief that the parents have a pivotal role in pediatric nursing care and they have been seen as experts on their children's emotional and psychological care. (Hallström, et al, 2002).

The Institute for Family-Centered Care at the University of Washington Medical Center defines patient and family centered care as a philosophy of care that emphasizes the importance of patient and family participation and involvement in health care decision-making; supporting families by building on their strengths; identifying preferences and priorities that are special to each patient and family; and encouraging a spirit of partnership and collaboration between patients, families, and health care providers. (Institute of Family-Centered Care, 2009).

Literature Review

A literature review highlighted the many benefits of FCC. It promotes well being by enabling the hospitalized children and their families to adapt to the healthcare environment, and improves communication between families and nurses. This guarantees parent satisfaction, as well as enhances their confidence and competence in caring for their sick child (Ballweg,2002; Lawhon, 2000; Van Riper, 2001). When healthcare professionals establish rapport with parents, both parties can work towards more personalized and informed decisions for the child related to this care. (Hallstrom, 2000). This kind of partnership improves patient and family outcomes, increases professional satisfaction, decreases health care costs, and leads to more effective use of health care resources (Committee on Hospital Care, 2003; Bechel, Mayers & Smith, 2002; Lanver, Gross, Ruff & Wells, 2004).

Macnab et al. (2000), assessed parent perceptions toward practices in a children's hospital in British Columbia using a telephone survey of structured and open-ended questions with 48 families. Elements of care assessed included involvement in decision-making, emotional support, comfort, and

information sharing. Issues of concern arising from the survey included such things as receiving conflicting information from both medical and nursing staff. Most parents felt that they were involved in decision making and care appropriately. However, those who felt that their involvement was inappropriate (24%-28%), reported that the degree of participation was excessive. Though parents generally felt prepared for discharge, one fourth of parents indicated issues such as need for more time to discuss post discharge concerns, remaining worries at discharge, and not being "fully taught how to give medications" (Macnab et al, 2000).

Family Centered Care requires that care given to families should be based on their needs. Hallstrom et al (2002) examined the parental needs of 2 girls and 22 boys (median age 5.5 years) via an observational study when these children were hospitalized in Sweden. Nine themes were identified in the study result which consisted of the need for security, mediating security to the child, communication, control, pleasing staff, being a competent parent, avoiding disturbing contact with relatives, releasing responsibility to professionals, and satisfaction practice. The most prominent needs identified in the study were the need for security and mediating security to the child. (Hallstrom, Runesson, & Elander 2002).

Kristjansdottir (1995) identified 43 needs of 34 parents in pediatric units in USA and Iceland. The needs were categorized as the need to trust health care providers, the need to be trusted, the need for information, the need for support, and guidance, needs related to human and physical resources, and needs related to other family members. (Kristjansdottir, 1995).

The study of Kyritsi et al (2005) describes the needs of 103 parents of hospitalized children (2 months - 14 years old) in a pediatric hospital, in Athens, by a predetermined parental list of need statements. All parents who had a previous hospitalization experience, either themselves or with another child of the family expressed a greater need to be trusted by the staff, for information, for support, and fulfillment of their physical and emotional needs. From the comparison of the needs of the parents of children suffering from chronic illness, a statistically important difference was found in relation to those parents whose children suffer from an acute illness, in the following needs: to be trusted, to be informed about illness, the prognosis and consequences on the development of the child. (Kyritsi, et al, 2005)

Parents often experience many stressful situations with the hospitalization of their child which may affect their satisfaction and ability to interact with their child.

Heuer in (1993) studied the stressors of parents whose children have been hospitalized. He found that there are several common sources of stress for these parents: their child's appearance, the strange sights and sounds of that environment, the unfamiliarity of the procedures performed, their child's behavior towards the staff, and the relinquishment of their parental role. To decrease parental stress, Heuer identified the importance of providing parents with information and reinforcing parents' beliefs that their parenting skills are still valuable during the child's hospitalization. (Heuer, 1993). Aldridge (2005) added other broad interventions to reduce stress among parents, such as providing support, developing trust, and enhancing the parental role. (Aldridge, 2005).

Among the main elements of family focused care and requested frequently by parents of many studies is information provision. The parents in Popper's study (1990) declared that they need to have information conveyed in understandable terms in order to be able to participate in making a decision related to their child's care. (Popper, 1990). The parents in the Kristensson-Hallstrom (1998) study were interested in information about treatment and how they could assist in procedural treatments. (Kristensson-Hallstrom, 1998)

A unit-based FCC Committee (2007) adopted a survey tool to evaluate the perception of 38 parents and 75 staff toward the FCC care provided in the unit. The study results showed that 41% of families and 58% of the staff were concerned with information and instructions that are considered essential in planning and preparation for discharge. (Neal, Green, Frost, et al., 2007)

The studies that investigate the efficacy of parent to parent support found that it may aid in their coping with stressors and allow them to discuss concerns with other parents in similar circumstances (Singer, Marquis, Powers et al ,1999). The increased parents' confidence and problem solving capacity, can have beneficial effects on the mental health status of mothers of children with chronic illness (Ainbinder, Singer, et al., 1998).

Studies related to FCC also acknowledged the importance of Parents' participation and involvement in health care which was considered essential to nursing practice (Pruitt et al ,2008). Consumerism has been a major driving force behind the movement supporting family involvement, because it is considered a foundation of quality pediatric health care (Ireys et al, 2001). Romino et al (2005) supported family presence to provide protection, comfort, guidance and encouragement which would help in alleviating fear and anxiety.

An article published by the American Academy of Pediatrics (2003) lends its support to the fact that children were found to have cried less, required less medicine, were less restless, and even experienced earlier discharge when the family was present during most aspects of care. Furthermore parents involvement in general nursing care of their child may reduce the length of stay in hospital, and take

responsibility for the care of their child (American College of Emergency Physicians and pediatric Emergency Medicine Committee, 2006).

Fina et al (1997) shared the benefits of family visitation and reported that children cried significantly less, were less restless, and were more comfortable during a parental visit. (Fina, et al. 1997).

Parental presence during medical procedures is an important issue in family-centered care. One study concluded that health professionals with more experience with seriously ill children were more likely to support parental presence during resuscitation procedures (O'Brien, 2002). Mason (2003) also reported that the presence of the family during invasive procedures created a bond between the family and the health care team, which reduced the possibility of a law suit. (Mason, 2003).

The relationship between the demographical data, medical administrative data and the applications of FCC was discussed in some studies. One study results stated that parents whose children were admitted on an emergency or acute basis were more likely to trust health care providers and limit their participation than parents whose children were admitted for an elective procedure (Hallstrom, 2000). The study result itself found that no correlation was found between Civil status, education, profession, respected hospitalization, duration of hospitalization and the parents wish to participate in the care, their choices of coping strategy or their ratings of pain and sleep.

Al-Momani (2002) in a national study investigated the satisfaction state of 262 parents of an NICU. The findings of this study showed that the total satisfaction percentage was very low (30.7%, poor). In the same study the parents' satisfaction level about the (providers' technical care) was very poor (21.1%). These indicators of deficits that parents have noted in the care given to their newborns, as well as reactions to the lack of family-centered care was discussed by Al-Momani. (Al-Momani, 2002)

Nurses spend more time with hospitalized patients than other members of the healthcare team and therefore have a significant impact upon parents' perceptions of their hospitalized experience (Crow, et al., 2002). Nurses can help to tailor care in order to meet the needs of the child's family. Parents should be empowered to make decisions regarding a child's care. Understanding of the family's capabilities and strengths, which will help nurses to ensure the child is provided the best care even after discharge (Hockenberry, Wilson & Wong, 2006)

In general, parents' satisfaction with nursing care has been advocated as an important aspect of outcome measurement in quality assurance programs, and it has been found as the most important predictor of overall patient satisfaction with hospital care (Mason, 2003).

Aim of the Study

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The Instrument and Data Collection

This descriptive research study was conducted in four phases. The first phase was content validation using focus group discussion with 20 mothers of PU admissions to assist in item generation and to provide empirical bases for the satisfaction tool. The focus group discussion was guided by the researcher; emphasis was on responses to questions developed from the list of common themes. These themes represented the most significant aspects of pediatric nursing care that determined ongoing mother satisfaction in the PU.

The second phase was developing the questionnaire: outcomes from the literature review and focus group discussion were input into a specially designed structured interview tool. This comprised 27 items of mothers' possible needs during their child's hospitalization.

The survey was arranged into 5 subscales each representing specific dimensions of the care experience as follows: Caring behavior (6 items), technical nursing care (5 items), informational (6 items), Availability and continuity of care (4 items), and personal and environmental needs (6 items).

The third phase was validity and reliability tests through an expert panel, statistical tests, and pilot study. The scales were sent to a judge panel of six nationally

recognized experts in child nursing care for content validity testing. It was modified as recommended by the experts. Internal consistency reliability was tested using Cronbach's alpha (0.81). Stability reliability was tested using the test-retest procedures. The structured interview questionnaire was pretested on 15 mothers, not included in the sample, prior to data collection. They were asked to complete the questionnaire and to comment on the structure of the questionnaire, the clarity of items, and ease of completing the questionnaire. All responded that the questionnaire was easy to understand and that it was representative of their needs.

The fourth phase was data collection (measuring mother satisfaction): A total of 292 mothers who were willing to participate in the study. They were interviewed immediately at the time of their child's discharge. The interview was conducted in comfortable conditions, taking into consideration the place, emotions, and conditions of the child, so that their response was as independent and accurate as possible. The interview started by using encouraging statements such as "your opinion is important to us", or "we want to know how you feel ". The interviewer asked the questions in simple, non-professional, and understandable words upon the request of the interviewee, or when the interviewer felt that the interviewee was confused.

The mothers rated their satisfaction on a 4- point Likert scale, including highly satisfied, satisfied, dissatisfied, and highly dissatisfied. These responses were scored as 4,3,2,1, respectively, then their satisfaction level was calculated.

Confidentiality

Subjects were de-identified and data was kept confidential. All data obtained in this study was used in a manner that does not allow public disclosure of the subjects' identity.

Data Analysis

The data was coded, entered and analyzed using the statistical package for social science (SPSS) by a statistical professional. The total family satisfaction score of nursing care of each dimension (which resulted from the focus group discussion) and the grand total of satisfaction score, was calculated according to the following:

For each item in the satisfaction part of the interview questionnaire, if the answer was highly satisfied, it was given score (4) on the Likert scale, if the answer was satisfied it was given score (3), if the answer was dissatisfied it was given score (2), and if the answer was highly dissatisfied, it was given score (1), for each dimension, then the total satisfaction score for the dimension and the grand total for all the dimensions were calculated.

Descriptive analysis with frequency and percentage, was done to describe the socio-economic and medico-administrative profile. Inferential statistics tests were used to determine the relationship between mothers' satisfaction level scores and their child's socio-demographic profile.

The Results

Demographic Characteristics of Respondents:

A convenience sample of 292 mothers participated in the study (Table 1 - page 32). Of these, 200 (68.5%) had previous admission, while the remainder 92 (31.5%) were admitted for the first time.

The age range for the study group numbers was 156 (53.4%) were 26-35 years old, and 82 (28.1%), were less or equal to 25 years old. As for the educational level, 94 (32.2%) were of a secondary educational level, followed by 54 (18.5%) of a high educational level, then by 50 (17.1%) of elementary educational level.

Concerning the employment status of mothers, 236 (80.8%) were not employed, and the remainder 56 (19.2%) were employed in a public or a private sector.

Two thirds (192, 65.8%) of the children were less than 3 years, and 52 (17.8%) were more than seven years old, and 48 (16.4%) of the children were aged between four and seven years.

As for the acuity and type of illness, the majority of children (n= 242, 82.8%) were found to have suffered from an acute illness, whereas 50 (17.2%) suffered from chronic illnesses.

The average length of stay of children was 5.21 days, and most of them 240 (82.8%) had stayed < 7 days.

With regard to the child's condition upon discharge, around three quarters of children (n= 224, 76.7%) were cured, whereas those who were not cured or referred to another hospital was about 68 (23.3%).

As for family income, 158 (54.1%) mothers' gross family income were from the category of 300 JD to 600 JD, eighty two (28.1%) less than 300JD, whereas the remainder 52 (17.8%) of children were from families with income more than 600 JD.

Descriptive statistics were used to evaluate the 27 structured response questions. The threshold established for these items was a mean satisfaction of (3, satisfactory). The grand mean of all items was below this level of satisfaction (mean, 2.72).

Concerning the aspects of care means level of satisfaction for the five dimensions, the mean items pertaining to availability and continuity of care was (3.13), followed by technical care dimension (3.08), caring behavior (2.84), personal and environmental needs (2.49), and informational (2.04).

Each of the 27 items on the survey was ranked in order from highest to lowest in terms of its mean score.(Tables 3 ,and 4). The aspects

The Variable	Frequency	Percentage
Admission Experience		
First Time	92	31.5
Admitted Before	200	68.5
Mother Age (years)		
Less than 25	82	28.1
26 – 35	156	53.4
More than 35	54	18.
Educational Level of Mothers		
Illiterate	36	12.3
Elementary	50	17.1
Preparatory	58	19.9
Secondary	94	32.2
High Education	54	18.5
Mothers Employment Status		
Employed	56	19.2
Not Employed	236	80.8
Child Age (year)		
Less than 3	192	65.8
4 - 7	48	16.4
8+	52	17.8
Types of Illness		
Acute	242	82.8
Chronic	50	17.2
Length of Stay (day)		
Less than 7	240	82.2
7 days or more	52	17.8
Childs Health Status at Discharge Time		
Cured	224	76.7
Partially Cured or Referred to Another Hospital	68	23.3
Family Income		
Less than 300 JD	82	28.1
300 – 600	158	54.1
More than 600	52	17.8

Table 1: Demographic Characteristics of Respondents (N = 292)

of care that showed the highest mean score were as follows : welcoming the mother and encouraging her to come to stay with her child as a family member(3.51); responding quickly to the mother's call (3.36), access to a convenient meal (3.35), proficiency of the nurse in the technical aspect of child care (3.33), provision of accessible opportunities for family members to ask questions from nurses (3.28), and support the family's role in decision making about services for their child (3.20).

The aspects of care with the lowest mean of satisfaction were as follows: Visitation hours convenient to all members of family (1.90), encouragement and facilitation of parent to parent support (1.88), the information provided to a parent related to a child's health condition and prognosis (1.73), access to a comfortable bed for sleeping (1.66), and the information provided to parent related to the child's tests, procedures, and treatment (1.48), health education provided to mother at discharge time related to home care (1.47), the information nurses provide about how illness and its treatment affectsa child's growth and development(1.30), access to a comfortable waiting room (1.20), and orientation to the unit, the nurses name and their professional characteristics (1.08).

The Item	The Mean
Availability and Continuity of Care (A)	3.13
Technical care (T)	3.08
Caring behavior (C)	2.84
Environmental and personal needs (E)	2.49
Informational needs (I)	2.04
Total	**2.67**

Table 2: The Mothers Satisfaction Means by Dimensions

The aspects of care	The Mean
Welcoming the mother and encouraging her to come and stay with her child. (C)	3.51
Responding quickly to mothers call (T)	3.36
Access to convenient meal (E)	3.35
Proficiency of the nurses at the technical aspect of child care. (T)	3.33
Provide accessible opportunities for family members to ask questions of nurses. (A)	3.28
Supports the family's role in decision making about services for their child.(C)	3.20

Table 3: The Aspects of Care With Highest Mean Of Satisfaction (Scored 3, Or More)

Table 5, (page 35) shows the relationship between overall level of satisfaction score and the socio-demographic and medico-administrative characteristics of mothers and their children. The findings of this study revealed no significant relationship between the variables, admission experience, mother age, mothers employment status, family income, and length of stay and their level of satisfaction.

Whereas, a significant relationship was found between overall satisfaction and the variables child age (p= 0.043), and mothers level of education (p=.038). Mothers of older child were more satisfied with their nursing care than mothers of younger children.

As for the mothers' level of education, the mothers' level of satisfaction tended to decrease as their level of education increased.

Discussion

The total mean level of mothers' satisfaction was lower than the threshold (2.67) as reported in (Table 2 - page 33). This low mean of satisfaction indicates that mothers were generally dissatisfied with the care they received in the pediatric unit, in other words there was no congruency between the mothers' expectation for ideal nursing care and their perception of actual health services perceived.

The items with highest mean of satisfaction were "welcoming the mother and encouraging her to come to stay with her child family members"; "responding quickly to mother's call", "access to convenient meal", " proficiency of the nurse in the technical aspect of child care", "provision of accessible opportunities for family members to ask questions from nurses", and "support the family's role in decision making about services for their child".

All the above are general principles for family centered care, so the pediatric nurse should always continue to adhere to these principles effectively.

The items with lowest mean satisfaction were " Visitation hours convenient to all members of family", "encouragement and facilitation of parent to parent support", "the information provided to parent related to child's health condition and prognosis" , "access to a comfortable bed for sleeping", "the information nurses provided related to child's tests, procedures, and treatment", "health education provided to mother at discharge time related to home care", "the information nurses provided about how illness and its treatment affects a child's growth and development", "access to a comfortable waiting room", and "orientation to the unit, the nurses name and their professional characteristics".

Concerning "the visitation hours convenient to all members of family", this indicates that mothers of this study wanted to be close to their children all the time, maybe because they feel that they are the experts on their child's needs. Earlier studies have shown that reuniting family members with their child during visitation hours has a calming and anxiety reducing effect for both the child and his/her parents, and significantly less crying, children were less restless, and were more comfortable during family members visit (Fina et al. ,1997). As for the item "encouraging and facilitation of parent to parent support", there is an agreement between reviewed literature that hospitalization is a stressful experience for both child and for parents. So they need emotional support and avenues to vent their frustrations and uncertainty of their proper role and responsibilities as parents. (Singer, et al, 1999) (Ainbinder et al., 1998).

The aspects of care	The Mean
Visitation hours convenient to all members of family (E)	1.90
Encouragement and facilitation of parent to parent support (C)	1.88
The information nurses provided related to child's health condition and prognosis (I)	1.73
Access to a comfortable bed for sleeping (E)	1.66
The information nurses provided related to child's tests, procedures, and treatment (I)	1.48
Health education provided to mother at discharge time related to home care (I)	1.47
The information nurses provided about how illness and its treatment affects child's growth and development (I)	1.30
Access to a comfortable waiting room (E)	1.20
Orientation to the unit, and the nurses name and their professional characteristics (I)	1.08

Table 4: The Aspects of Care with Least Mean Of Satisfaction (Scored 2, Or Less)

The items pertaining to "information and education category" took the lion's part of the top dissatisfaction. Most of the literature reviewed was concerned with importance of sharing information and explanation between parents and professionals as the first step toward establishing a collaborative relationship.

The findings of this study revealed the same theme as that of Popper's (1990) study on parents who reported their need for information that enables them to share with nursing staff decisions related to their child's care (Popper, 1990). Neal et al (2007) also reported that these findings were relatively concordant with parents who were concerned with the information and instruction for proper planning and preparation for discharge. (Neal et al ,2007)

Questions pertaining to the environmental category that influenced mothers' level of satisfaction negatively, were "access to a comfortable bed for sleeping", and "access to a comfortable waiting room". Many studies identified physical environment from the important themes as significant areas that determine ongoing patient satisfaction in the pediatric unit (Neal et al ,2007;Al-Momani,2002; Miceli &Clark,2005). Based on the responses of mothers of this study, these data might provide input for structural plans related to unit facilities and design, as well as justify administrative initiatives to improve existing waiting room facilities.

The study results revealed there was a significant relation between the overall level of satisfaction and the demographic variables of child age (p= 0.043), and mothers level of education (p= 0.038).

Mothers of older children were more satisfied with their nursing care than mothers of younger children. This finding could be explained by the fact that the younger children were more often admitted with serious conditions which could threaten their life. Their parents experience many painful and stressful situations, prognosis of disease, and hospitalization that may affect their satisfaction. Those of older children admitted with less serious conditions, consequently more often have a good diagnosis and need not be attached to highly sophisticated equipment nor have a prolonged hospital stay, so their parents were less exposed to stressful and anxious situations, producing a higher level of satisfaction.

Implications and Recommendations

Monitoring mothers' level of satisfaction with healthcare services can provide managers and ward nurses with valuable information on improving the quality of care. It is important to take into account children and their families in the evaluation of family centered care principles.

A number of implications for practice, education, administration, and research emerge from the study results. The need for continuing education sessions that focus on skill development that facilitates parents/ professional collaboration is warranted for nurses working with children and families in general hospitals.

Basic nursing education programs need to incorporate, in a more systematic way, the concepts of family-centered care, and give students opportunities to develop the necessary skills in clinical experiences.

Administrators and nurse leaders in key positions in general hospitals with pediatric beds need to recognize the special needs of children and families. These must be translated into policies and programs that facilitate and reward nurses as they shift towards an enabling philosophy of family-centered care. Nurse leaders should make explicit the expectation of collaboration with children and their families when hiring staff, developing job descriptions, and designing the appraisal performance system.

Health administrators should consider the design of the physical layout of the pediatric unit. It should meet the developmental and psychological needs of the child and family. Nurse leaders advocate for opportunities for families to be involved, and have a voice in the design and construction of the unit; and ensure that the design provides adequate space for a waiting room,

The Variable	Frequency	Mean	Standard Deviation	Significance
Admission Experience				t = - 0.31
The first admission	92	2.65	0.73	df = 289
Admitted before	200	2.68	0.59	p = 0.75
Mother Age (years)				
Less than 25	82	2.68	0.57	f = 0.41
26 – 35	156	2.60	0.61	df = 2,286
More than 35	54	2.75	0.62	p=0.79
Educational Level of Mothers				
Illiterate	36	2.87	0.62	
Elementary	50	2.55	0.73	f = - 2.89
Preparatory	58	2.55	0.56	df = 4, 285
Secondary	94	2.73	0.64	p= .038*
High Education	54	2.66	0.56	
Mothers Employment Status				t= -.086
Employed	56	2.62	0.60	df = 286
Not Employed	236	2.68	0.64	p = 0.61
Child Age (year)				
Less than 3	192	2.62	0.55	f= 2.03
4 - 7	48	2.84	0.50	df = 2,287
8+	52	2.78	0.64	p= 0.043*
Types of Illness				t= 1.81
Acute	242	2.73	0.61	df = 287
Chronic	50	2.50	0.59	p = 0.76
Length of Stay (day)				t= - 1.21
Less than 7	240	2.70	0.86	df = 289
7 days or more	54	2.89	0.59	p= 0.48
Childs Health Status at Discharge Time				t = 1.97
Cured	224	2.71	0.56	df = 287
Partially Cured or Referred to Another Hospita	68	2.52	0.81	p = 0.59
Family Income				
Less than 300 JD	82	2.65	0.72	f = 1.022
300 – 600	158	2.62	0.64	df = 2 , 142
More than 600	52	2.84	0.51	p = 0.35

Table 5: Relationship between Demographic Variables and Scores of Satisfaction Level.

supplied with comfortable furniture and bed, good ventilation and lighting.

In the clinical setting, nurses have the additional responsibility of creating a partnership with the family from admission through to discharge. The nurse should promote pre-admission programs which familiarize children and families with hospital and unit facilities, staff, routines, and equipment prior to scheduled admissions. Prior to any nursing procedures the nurse should explain the procedure to the child and family. The nurse should assist parents to gain access to honest and unbiased information about their child's condition, treatment options, and prognosis. This enables them to participate in the decision making process related to their child's health. Providing flexible visitation times that meet the family needs, and supporting parents to discuss concerns with other parents with similar experiences in formal or informal parents groups are essential to Family Centered Care. In addition, nurses should give attention to the role of parents in the development and review of hospital policies and practices.

All research with the aims to implement the philosophy of family centered care in all venues of care should be facilitated and encouraged. There should be emphasis on the use of case studies to promote problem solving and application of FCC to clinical practice. Families should be invited to collaborate in pediatric research programs.

Study Limitations

The convenience sampling of this study affects the ability to generalize the findings.

Future research in the field of family centered care should include the family's experiences with the application of family centered care principles. More studies with larger samples are needed across multiple hospitals. In addition, longitudinal studies are needed to evaluate the impact of FCC interventions. Study to investigate the quality of health care from the child's perspective to increase the possibility of involving them in the care plan is advised. Further research is necessary to examine hospital staffs' knowledge, and attitude about family centered care.

Conclusion

In pediatric practice in Jordan public hospitals adequate attention has not been given to families' needs and satisfaction. Health care professionals frequently neglect to stress the singularity of the parental role and to include them in the health system care plan.

The findings of this study suggest that the mothers had a reasonable understanding of their needs and the elements necessary to practice family-centered care. The most and least means of mothers' satisfaction toward the aspects of health care were also identified. Armed with these data, administrators, nurse leaders, and ward nurses can plan, and implement effective strategies to promote family centered care principles.

Although the nurse in this study worked in a Jordan public hospital, many of the themes are universal and apply to nurses worldwide.

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PUBLIC DEMOGRAPHY VS PUBLIC HEALTH NEEDS: A SOCIO-DEMOGRAPHIC STUDY OF ABORTION IN IRAN

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Abstract

The paper explores abortion practice among women in Iran. Though it is severely restricted by law, yet it is practiced by some women who really need to do it under certain circumstances, and for the reason of individual social welfare in particular, and public health in general. As women who undergo abortions are not easily accessible, the information was collected through selected health workers who are quite knowledgeable about such women who apply for the operation. As family planning and fertility inhibition are extensively practiced in Iran, a socio-demographic study of abortion is worth assessing. The study was carried out with the help of 415 health workers stationed at various hospitals in Tehran City. The research estimated twenty variables among women of age groups 20-30 who are usually at the peak of their fertility. As compared with women in other Asian countries, the estimated number of abortions in Iran per year is very low. Fear of large family size, or other social fear/phobia usually motivates women to choose abortion to terminate their pregnancies. It is currently a global problem, and its solution is ever sought.

Introduction

The present research identifies abortion as a bridge between public demography and public health. Public demography could be used to formulate policies regarding public welfare. If population issues are not considered and if population is not well projected, then many of the next generations will face constraints, labour migration, unemployment, socio-economic pressures etc. However, public demography could offer solutions concerning the potential population issues (Donaldson, 2011). Abortion practice is counted as one of the solutions to access relative social welfare in a society.

The practice of abortion is terminating a pregnancy resulting in, or closely followed by, the death of the human fetus. Though it is practiced in many countries, yet real statistics are not easily accessible in some countries. Unfortunately, it is often a hidden practice, and a method of family planning in many countries, and for many women/families. Abortion has become a prevalent social issue, extremely debatable and controversial in many societies. The present paper reflects an image of abortion in Tehran. As it is not easily possible to directly approach such women, the researcher approached some health workers in different hospitals in Tehran to collect the necessary data. Therefore, the opinions on abortions in this paper are not those of the researcher, but, that of the health workers who have reflected the attitudes of abortion applicants.

Usually, unwanted pregnancies may lead to abortion practice, and many women avoid it. Other methods of family planning such as pills, when ovulation does not occur etc. must be practiced beforehand, and before a fetus is created. As the fetus sleeps, wakes, hears, senses, and simply continues to grow until birth, therefore ethically speaking, abortion is a hard practice to decide and act upon.

There are many issues today that pose a threat to our way of life. Overpopulation is a serious problem that will eventually have an extremely negative effect on countries' welfare, especially the developing ones. The term overpopulation literally means that the number of humans that depend on resources for survival is significantly larger than the amount of resources available to them. Many believe that Earth is presently occupied by too many people. However, year after year the population multiplies faster and faster. While the population of Iran grows by about 1 million a year, that of the world is currently growing by 80 million people a year (Hohm:2000). Both developed and developing countries are at risk of the dangerous problems that overpopulation can and will create, and nearly sixty percent of the increase will occur in Asia.

As we know, population is determined by the interplay of two factors, i.e. the birth rate, or the number of people being born, and the death rate, or the number who die. The difference between the two is called the rate of natural increase. Uncontrolled, immature reproduction is a leading cause of overcrowding. Disease and medical advances that cause a decrease in deaths are also aspects that affect population.

Because of overpopulation, and the negative effects, there are a few possibilities that can at least balance out the growing population size. Reducing birth rates by utilizing different strategies including legal abortion is the most prominent of these ideas. Increasing the legal marital age would postpone child bearing. Similarly, making birth control pills easily accessible, providing legal places for termination of pregnancies, and wisely helping people become more knowledgeable about abortions and contraception would highly help in balancing and stabilizing population size versus the environment and other resources. As far as resources are concerned, it is apparent that the era of cheap energy, adequate amounts of food, and necessary open spaces is coming to an end. Regardless of whether we admit it or not, our attempts to stabilize population, will have a positive affect on the lives and resources of the generations to come, and our failure to do so, will have a devastating affect on the quality of life of future generations.

Method of Research

The technique used in the present research is a qual-quant method to generate a comprehensive and detailed description of a content domain. It consists of asking eyewitness observers for factual accounts of behaviours which significantly contribute to a specified outcome. The paper illustrates how to conduct a critical incident study of women's attitudes towards abortion practice in Tehran City in Iran. In addition to the qualitative theoretical part of the research, for the empirical part, the researcher referred to the health workers and health professionals of some hospitals in Tehran to indirectly obtain the intended data. The interactions between the health workers and the patients made it possible to complete the research. To conduct the present research, some 415 health workers stationed in different hospitals were randomly approached and the designed questionnaires were completed by them, and on behalf of applicants for abortion. The present research is based on the main hypothesis that: "binding to the codes of ethics, and planned conceptions based on previous decisions, would itself prevent the abortions from occurring". The researcher also reviewed and used in context the background literature on abortion practice as per need.

Literature and Theoretical Perspectives

While the Guttmacher Institute has widely compiled statistics on legal abortions in the past few years, the latest report (Sedgh et al., 2007), estimates that 22 million legal abortions occurred in 2003, and it includes country-specific data. The five countries with the highest number of legal abortions in recent years have been identified as: China (7.215.000), India (2.400.000), Russia (1.504.000), United States (1.287.000) and Vietnam (540.000). Since the early 1980s the World Health Organization has been monitoring the unsafe and illegal abortions, and has published estimates on a regular basis. Its latest estimates can be found in the 5th edition of Unsafe Abortion (WHO, 2007). It estimates that 20 million illegal abortions occurred in 2003. According to estimates, out of the 210 million pregnancies in the world each year, approximately 130 million result in live birth, 38 million in spontaneous abortions and still birth, 22 million in legal abortions, and 20 million in illegal abortions (WHO, 2007). About 80 million of these annual pregnancies are estimated to be unintended. So, induced abortion, legal and illegal, is currently being used to end somewhat more than half of the world's unintended pregnancies:

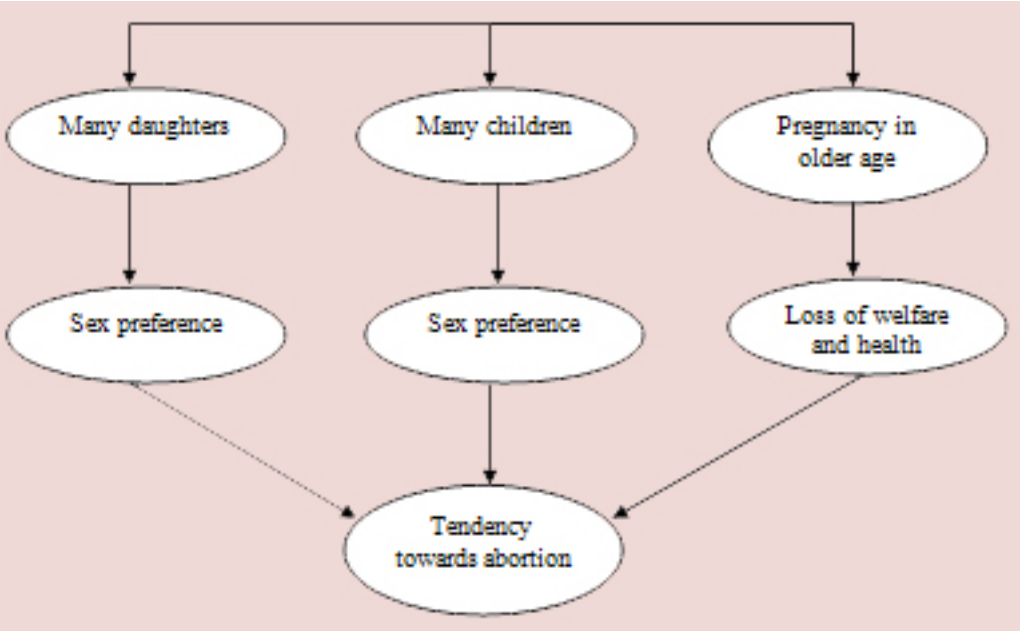
Seven standard grounds are used to categorize when countries permit abortion:

1) To save the life of the woman.
2) To preserve physical health.
3) To preserve mental health.
4) For rape or incest.
5) For fetal impairment.
6) For economic or social reasons.
7) On request.

Such abortion policies and global reviews are declared by the UN Population Division (United Nations: 2002). However, in all cases where countries permit abortions on request for economic or social reasons, the permission exists for a limited gestational period of 10 to 24 weeks (United Nations, 2002). Abortion as an ingredient in modern sex selection, has long been legal in many Asian countries. In China, India and South Korea pregnancy termination has been authorized respectively since 1957, 1971, and 1973. Sex selective abortion looks more "modern" in modern times (Varma, 2002 and Gammeltoft et al., 2007).

Understanding the rationale behind sex preference is key to deciphering the dynamics of the sex ratio in Asia, and what Miller calls patriarchal demographics (2001). However, abortion remains a very sensitive matter for many mothers so far as sex selection is concerned in countries where it is widely practiced (Nie, 2005). It is note-worthy that in countries where abortion (sex-selective) is discouraged or condemned, sex ratios are close to normal levels among various age groups. However, many commentators initially blame sex-selective abortion (Douglas and Edlund, 2008; Abrevaya, 2009). In modern times, fertility decline reinforces the need for sex-selection everywhere by discouraging the use of age-old strategy of trial- and-error through repeated pregnancies.

Economic and social development in every society usually contributes to the rapid diminishing of bias by gender. A recent study by Chang and Das Gupta (2007) stresses the role of social change, encompassing both structural transformations and more importantly a gradual weakening of male-oriented social norms leads to a normal sex ratio in a society. Similarly, the changing values of younger cohorts, and further education of women are also seen as factors contributing to indifference to the sex of children born (Lin, 2009).



Model of Research - Motivations of Abortion

Age of applicants	Number	Percentage
Total	**415**	**100**
Less than 20	69	16.63
Age 20-24	64	15.42
Age 25-29	115	27.71
Age 30+	167	40.24

Table 1: Applicants for Abortion by Age in Tehran City 2010

Iran's Fertility Trends

Between 1980 and 2010 fertility in Iran declined from levels of nearly 6 births per woman (Statistical Yearbook of Iran-1981) to rates of about 1.8 children per woman "measured by the total fertility rate, TFR" (WPDS: 2010). Analysts are skeptical of reports of very low fertility levels in Iran. Factors such as more years of schooling by girls, postponement of marriage by the girls to the age of 20 and beyond and more socio-economic participation by girls, all highly contribute to the lowering of fertility in Iran. Moreover, the usage of different types of family planning methods, and the underground practice of abortion contribute to this decline. Abortion accounts for 4 percent of fertility inhibition in Iran (IFPP,2008). Abbasi-Shavazi et al. (2009) also point out that the phenomenal fall of fertility in Iran since the early 1980s is unprecedented and a reference in the history of fertility transition in Iran. Nevertheless, skepticism remains both among foreign scholars and among the Iranian policymakers, about the current fertility levels and the likely future trends in Iran. We can thus forecast continued below-replacement fertility in Iran.

Findings

In this section, the researcher reflects the tabulated data as obtained through selected health workers in different hospitals in Tehran. As the tables are too many, only a few of the basic ones will be provided in the present paper, and the rest will simply be explained/ analyzed.

Analysis of Data

In response to a question; occupational status vs tendency towards abortion, 157(37.83%) out of the total number of 415 were reported as housewives, 173(41.69%) were employed, 65(15.66%) had informal occupations, and finally 20 (4.82%) had sensitive occupations.

The number of desired children being an important practice, reflections of women towards abortion practice, reflections of women towards this question at the time of referral were as such: For 68 (16.39%) out of the total 415 samples the desired number was one child, 285 (68.67%) wanted two children, 25 (6.02%) of the women wanted only two sons, and 37 (8.92%) of those sample women wanted no child(ren) at all.

As reported by the health workers, the occupational status of the husbands of the women referring for abortion were: The husbands of 165 (39.76%) women were employees, 141 (33.98%) had free jobs, 98 (23.61%) were unemployed, and 11 (2.65%) were retired.

Age of applicants	Total		Illiterate		Primary Education		Secondary Education		Tertiary	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	**415**	**100**	**38**	**9.16**	**62**	**14.94**	**209**	**50.36**	**106**	**25.54**
Less than 20	69	16.63	8	1.93	16	3.86	39	9.4	6	1.45
Age 20-24	64	15.42	9	2.17	13	3.13	33	7.95	9	2.17
Age 25-29	115	27.71	9	2.17	20	4.82	64	15.42	22	5.3
Age 30+	167	40.24	12	2.89	13	3.13	73	17.59	69	16.63

Table 2: Applicants for Abortion by Age and Education Status in Tehran City 2010

Age of applicants	Total		1 Child		2 Children		3 Children		4 Children and more	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	**415**	**100**	**64**	**15.42**	**178**	**42.89**	**94**	**22.65**	**79**	**19.04**
Less than 20	69	16.63	20	4.82	22	5.3	11	2.65	16	3.86
Age 20-24	64	15.42	17	4.1	28	6.75	10	2.41	9	2.17
Age 25-29	115	27.71	16	3.86	58	13.98	30	7.23	11	2.65
Age 30+	167	40.24	11	2.65	70	16.87	43	10.36	43	10.36

Table 3: Applicants for Abortion by Age and the Number of Live Children in Tehran City 2010

The women referring for abortion as reported by the health workers, were also measured according to the monthly income of their husbands. 142 (34.22%) of those women declared their husbands' income less than US $ 210 per month, 86 (20.72%) declared it between US $ 210 and 262, 73 (17.59%) were reported with the monthly income of US $ 263 and 314, and finally the monthly income of 114 (27. 47%) of women's husbands was declared US $ 315 and over.

Applicants for abortion by motivation to act upon could be reflected as such: Out of the 415 samples, 214 (51.57%) of such women wanted to further control the family budget by their actions, 56 (13.49%) women meant to amplify their comfort in this way, 128 (30.84%) of such applicants sought to uplift their quality of life in their life course through accepting abortion, and finally, the health workers reported that 17 (4.1%) of such women sought to further and improve their health through accepting abortion.

Similarly, out of the 415 respondents under study, 205 (49.4%) opined that their practice of abortion would positively affect the life of their present children, 13 (3.13%) of the samples referred to, by the health workers opined that their abortions would contribute to improved generations, 175 (42.17%) believed that their abortion would contribute to further investments in their existing children, and finally 22 (5.3%) of such women opined that their abortions would prevent further unemployment in the future.

In another question the health workers were asked about the preventive measures of abortion among women. In that, 249(60%) pointed to religious barriers to stop women from abortion, 53 (12.77%) emphasized on possible risks as controlling factors, 99 (23.86%) pointed to the legal barriers, and finally 14 (3.37%) referred to family barriers as preventive measures of abortion within the women sampled.

In cases where women practiced abortion, the respondents declared that 39 (9.4%) used public hospitals, 65 (15.66%) referred to private hospitals, 149 (35.9%) pointed to underground centers and finally in 162 (39.04%) cases, they reported that such women resort to any means to reach their ends.

In response to this question, i.e. abortion usually takes place after which child number? 158 (38.07%) reported after the second child, 93 (22.41%) declared after the third child, 19 (4.58%) believed after two daughters, and finally 145 (34.94%) declared in case of unplanned and sudden pregnancies.

Similarly, 76 (18.31%) of the health workers expressed that abortion within women was an individual need, 265 (63.86%) believed that it was a family need, 37 (8.92%) were of the opinion that such an action was a social need, and eventually 37 (8.92%) believed that it used to happen due to women's occupations.

Usually after the second delivery women seek means to terminate their conceptions. Therefore, in the questionnaire designed, some questions were asked in this regard.

The health workers reported that after the second delivery, 166 (40%) of applicants seek means to terminate their conceptions, 155 (37.35%) women apply for abortion after their third child, 52 (12.53%) apply for the operation after their second daughter and finally 42 (10.12%) of women refer to hospitals for abortion after their third daughters. However, as there is still some sex preference in Iran, as in many other developing countries, women with daughters apply more for abortions.

In table 15 of the survey, the researcher enquired about preferred family size. In this regard, the health workers working with such families/ women declared that 27 (6.51%) of such women advocate large families, 49 (11.81%) of the husbands of such families prefer large families, in case of both couples, 21 (5.06%) are interested in families with many issues, and in the case of 318 (76.63%), none of them (husband/wife) prefer large families.

In another question, the researcher inquired from the health workers; "which sex do women prefer to abort when referring to the hospitals"? In response, 110 (26.51%) preferred to abort a female fetus, 25 (6.02%) preferred to abort a male fetus, 57 (13.73%) do both and 223 (53.73%) of women are indifferent.

The way to solve population increase is nowadays a social problem. To investigate this , women's approach seeking abortion was investigated through the health workers. Reflections on this question were; 17 (4.1%) of women declare that through abortion the practice population problem is solved, 204 (49.64%) declare that through chemical contraceptives the problem is solved, 22 (5.3%) believe that through increase of the legal age of marriage the problem is solved, and finally 170 (40.96%) express through natural timing, or timing intercourse when ovulation does not occur, solves the problem.

In response to the question; what are the consequences of abortion, the reflections of women via health workers were : 220 (53.01%) of women believe that abortion contributes to the loss of health, 14 (3.37%) of women believe that it promotes health, 134 (32.29%) of referring women believe that it contributes to child spacing, and finally 47 (11.33%) of such women believe that it diminishes the frequency of risky deliveries.

Attitudes of the referring women towards abortion practice as expressed by the health workers were ; 62 (14.94%) of such women believe that abortions are not safe, 96 (23.13%) of women assess abortion as to some extent safe, 149 (35.9%) of referring women believe that abortions are risky to some extent, and 108 (26.02%) women find it fully dangerous.

Another table of our research reflects the applicants' attitudes towards abortion in this way; 46 (11.08%) of women commit abortion after sex determination, 213 (51.33%) of women commit abortion regardless of sex determination, 60 (14.46%) of women accept abortion for the preservation of mental health, and abortion due to the likely risks.

Discussion

To discuss abortion, we note that an established link exists between population studies and public welfare, so population scientists should prioritize public demography in order to promote public welfare in a given society. We observe that medical science has advanced to the point where we have options that were unthinkable even a few generations ago, and where old rules and ways of life cannot cope with new facts. Abortions can be performed safely, though they can occasionally cause medical or psychological problems. Some examples of contemporary rules and views about abortion will perhaps demonstrate the complexity of the problem. Some doctors and nurses dislike to carry out abortions because they feel that their job is to save life, and not to destroy it. However, since abortion is a moral and ethical issue, its discussion and interpretation affects many people not in our society, but in every other society. In the meantime, abortion is a discussion of human interaction where ethics, emotions, and law come together. Abortion could save women from an experience that could either damage or kill them. Abortion is a controversial issue, and there are hundreds of reasons why it happens. Therefore, every abortion that occurs has a story behind it, or a reason behind it.

Induced abortion has always been a significant factor affecting number of births and population growth rates (Frejka, 1985). When populations face stagnant growth or the prospect of actual population decline, the concerned policymakers often see abortion as a harmful act for both society and the individual.

Abortion culture is always in fluctuation in countries. For example, in countries like France family planning was not much appreciated before 1967. Hence, "demographic equilibrium", i.e. large families with three or four children were encouraged (Watson, 1952). That is to say, until 1967 when there was a statutory provision for the legal distribution of contraceptive devices in France (Latham, 2002). By that time worries over depopulation dissipated in that country for the total fertility rate of 2.6 children. However, gradually France's experiment with coercive pro-natalist policies ended, and in 2003 there were some 208,000 abortions in that country (Sadegh et al., 2007) , and 761,464 live births (INEE, 2009) with a ratio of 273 abortions per 1000 live births.

Japan also passed various population fluctuations in the 20th century. During 1950 to 1955 couples using contraceptives had increased from 29 percent to 52 percent in that country (Taeuber, 1956). During the same period abortions rose in an even more dramatic fashion; from 489,000 in 1949 to 1,143,000 in 1954. That is a growth rate of 134 percent during only 5 years. That may be due to the force of indoctrination in that country

in which women used to have more socio-economic participation. For the remainder of the 1950s abortions held at the level of 1.1 million a year for Japan (Balfour, 1961), and by 1959 the abortion ratio was 679 abortions per 1,000 live births in Japan (Davis, 1963). However, by 1990s more progressive pro-natalist policies were wishing to combine childrearing and paid work (Ogawa, 2003). In 2003 there were an estimated 320,000 abortions in Japan and 1,134,000 live births (Sedgh et al., 2007). As far as Iran is concerned, overall, Iranian women have an estimated 73,000 abortions per year (IFPP, 2008).

Because of availability and accessibility of modern contraceptives, abortion rates have declined in many countries in recent years. On the other hand, as the culture of family planning has become very prevalent in many developing countries including Iran, increasing numbers of abortions have been carried out among women under different conditions; legally, and semi-legally and underground. Modern socio-economic and cultural conditions induce many women to adopt abortion as a way of terminating their conceptions. As discussed by scholars, 'abortion is the horse that pulls contraceptive practice into the community" (Potts et al., 1977). However, abortion to be performed on request, is yet a question, and a problem to be solved not only in Iran, but, in a large number of societies. Reducing unintended pregnancies, and the need to reduce rates of maternality are the issues which require further elaboration in Iran.

Conclusion

The socio-economic reasons are known as to some of the major reasons why women decide to abort. Similarly, to access more social welfare, women choose abortion and termination of their unwanted child. The paper reflects an image of women who often refer to the medical centers for possible abortions if and when necessary. As it is usually not possible to directly contact such women applying for abortions in Iran, therefore their concerned data was collected through the health workers who handle such cases. Abortions normally occur due to unwanted pregnancies, and more often as emergency cases, not only in Iran, but in many other countries. If and when other contraceptives are not accessible, or used properly, women may inevitably resort to abortion, often underground and in an unsafe way. Fear of over- population has made many governments legalize abortion, and at the same time fear of large family size, or social fear/phobia often persuade women to induce abortion. Regardless of whether we admit it or not, overpopulation will have negative effects on both family and the society as a whole. Any failure in this regard will affect next generations as well.

To clarify the issue, examples of other countries have been posed in the text as per need. Statistics indicate that fertility rates have dramatically fallen from 6 to 1.8 children for women in the past 30 years which is the result of the usage of all the means possible to check fertility and child delivery. Very low fertility trends in Iran to some extent, and implicitly, indicate the practice of abortion among the women. Though policymakers often see abortion as a harmful act for both society and the individual, yet abortion in some cases could save the lives of women both physically and psychologically/mentally. As the author could not directly approach the women applying for abortions, the research was followed through randomly selected health workers in different hospitals in Tehran. Similarly, as abortion is a global phenomenon, then some sort of international literature review was conducted on the issue. The paper explores that abortion to be carried out on request is a global problem, and its solution is ever sought.

Findings indicate that according to health workers, above 40 percent of those applying for abortion are 30 years of age and older, which is a good reason for low fertility rates among women in Iran. However, the samples have been scaled according to different characteristics of women such as their age groups, their educational status, the number of their children, their income etc. While so far, such a socio-demographic study on women's attitudes towards abortion has not been conducted in Iran, the author hopes for further relevant surveys on the issue.

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