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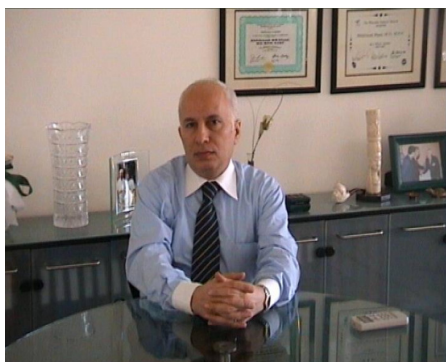
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This issue is rich with a number of research and review papers in addition to a review by the publisher on Zika Virus.

A paper from Saudi Arabia attempt to explore current birthing services in KSA from care consumers' perspectives by reporting women's birthing experiences and voices. The author stressed that reporting the voices of women giving birth in KSA in order to inform policy developments within the Saudi maternity healthcare system is important to understand what the women want from the service and how to improve it. Within the first 24 hours after giving birth in one of the three selected public hospitals, 169 women shared their birth experience through their responses to an open-ended question on a questionnaire or by contributing in one-to one conversation with the researcher. Thematically analysing 169 written responses and notes for conversation have produced two main categories which include themes and number of sub-themes.

The first and major category is "The relationship between women and care providers during birth" which considered by most women the leading cause for better and satisfied birth experience if this relationship characterised by support, respect, trust, and empowerment. The second category is "Hospital rules and policies and childbirth experience" especially if these policies restrict women choices and brought into action without full explanation to women about why these policies are active. The author concluded that Maternity care policy makers in Saudi Arabia have to consider women voices in building and reviewing maternity policies and focus on empowering childbearing women and ensuring safe motherhood.

A on a cross –sectional study from Iran with the main aim is to determine the Knowledge, attitude, performance towards crack abuse side effects according the students gender and pertinent faculty The present descriptive and analytical research Knowledge, attitude, performance towards crack abuse side effects according the students gender and the research population (n = 906) consisted of all the students from different faculties of Islamic Azad University, Islamshahr Branch and were selected using the stratified sampling method and were allocated to respective groups according to gender. The data collection tool was a questionnaire. The research data were analyzed using the t-test, and also Chi-square and ANOVA tests and the Pierson correlation coefficient. Data related to the measurement of the students 'knowledge , attitude, and performance regarding the short-term and long-term crack abuse side effects are shown in tables 1, 2, 3, and 4. The results obtained revealed that students' needs assessment towards crack abuse side effects at three levels, namely their knowledge , attitude, and performance were lower than 50%; such that 58.2% had a low-level knowledge , 55.5% had a negative attitude, and 49% of them had an unfavorable performance level. The author concluded that the findings related to the comparison of the mean male and female students' knowledge, attitude, and performance regarding crack abuse side effects revealed a statistically significant correlation at the areas of attitude and performance; also

a statistically significant correlation was observed between gender and attitude (mean attitude among females and males was 71.10 and 68.97, respectively) and between gender and performance (mean performance among females and males was 78.5 and 73.9, respectively), i.e. attitude and performance was higher among females. ($P \leq 0.000$ in all cases).

A thesis from Saudi Arabia described ICU nurses' experiences of end of life care. Critically ill patients and death are common in the intensive care unit. Evidence indicates problems that affect the quality of end of life care. Non-beneficial or palliative care is not explicitly supported by critical care policy. Many patients do not feel comfortable in the ICU. This situation can distress ICU nurses when providing end of life care. A literature review was used and 16 recent scientific articles were included in this study. Findings were organized in Word files and data analysis was inspired by qualitative content analysis. The result emerged many of ICU nurses challenges that may affect the quality of end of life care. This included incompatible ICU environment, different behaviors and cultures, feeling of unnecessary care and lack of the following; emotional support, involvement, procedures, standards and knowledge. On the other hand, it found that an effective teamwork might improve nurses' feelings in providing end of life care. Further, ICU nurses have significant roles in supporting dying patients and their families to be at peace, comfort and meet their needs. Yet, modify dying patient's environment and allow family presence in the ICU are important, as well as, single rooms are considered as an ideal place for dying patients and their families. The author concluded that many challenges of providing end of life care were presented. These challenges may affect the quality of end of life care, frustrate ICU nurses and may struggle nursing care and the personality of nurses. On the other hand, ICU singles rooms were recommended in end of life care and there are some significant roles may support dying patients and their families.

INTENSIVE CARE UNIT NURSES EXPERIENCES OF PROVIDING END OF LIFE CARE

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Abstract

Introduction: Critically ill patients and death are common in the intensive care unit. Evidence indicates problems that affect the quality of end of life care. Non-beneficial or palliative care is not explicitly supported by critical care policy. Many patients do not feel comfortable in the ICU. This situation can distress ICU nurses when providing end of life care.

Aim: The aim of this thesis was to describe ICU nurses' experiences of end of life care.

Method: A literature review was used and 16 recent scientific articles were included in this study. Findings were organized in Word files and data analysis was inspired by qualitative content analysis.

Result: The result emerged that many of ICU nurses' challenges may affect the quality of end of life care. This included incompatible ICU environment, different behaviours and cultures, feeling of unnecessary care and lack of the following; emotional support, involvement, procedures, standards and knowledge. On the other hand, it found that an effective teamwork might improve nurses' feelings in providing end of life care. Further, ICU nurses have significant roles in supporting dying patients and their families to be at peace, comfort and meet their needs. Yet, modifying dying patient's environment and allowing family presence in the ICU are important, as well as, single rooms are considered as an ideal place for dying patients and their families.

Conclusion: Many challenges of providing end of life care were presented. These challenges may affect the quality of end of life care, frustrate ICU nurses and may struggle with nursing care and the personality of nurses. On the other hand, ICU singles rooms were recommended in end of life care and there are some significant roles that may support dying patients and their families.

Key words: ICU, End of life care, Nurse's experiences

Introduction

Critically ill patients and death are common in the ICU [1]. A large epidemiological study estimates that one in every five ICU patients dies [2]. Further study shows that two and a half million people die every year in the United States, 60 percent of them die in hospitals, half of this 60 percent die in ICU. These figures illustrate a situation that may be similar to other countries. The number of individuals dying in intensive care units has increased significantly [1]. The intensive care unit does not clearly increase the survivor rate, but futile medical interventions may prolong the dying process for patients who have a fatal condition [3].

Critically ill patients in an ICU commonly need life-saving treatments in order to prevent premature death [4]. It is considered that the ICU is a place for aggressive treatments to cure critically ill patients and death is a treatment failure. Furthermore, the appropriateness of the location of death may be affected by some factors such as gender, illness, age and socioeconomic status [5].

The number of patients in the ICU can increase rapidly; an ICU environment does not necessarily improve quality of life and patients' satisfaction. Thus, demands for appropriate ICU care for patients with terminal illnesses increases [6]. Moreover, most end of life care research generally is focused on improving quality of care in hospitals [7].

Many patients die in critical care settings with ongoing technological interventions rather than making use of palliative care or hospice facilities [5]. End of life care is an essential part of ICU care. However, evidence indicates that there are problematic issues with the quality of end of life care within ICU facilities. For instance, patients die with mild or acute pain and physicians often do not perceive patients' preferences. Families of ICU patients have symptoms of depression, anxiety and stress disorder [8]. Critically ill or dying patients experience feelings of loneliness, pain, anxiety and fear. Unconscious patients cannot communicate their wishes and needs [4, 9, 10].

Currently, non-beneficial or palliative care is not explicitly supported by critical care policy. This leaves critical care nurses without obvious guidelines to deal with dying patients [11, 12]. In this study the author focuses on describing ICU nurses' experiences about end of life care in two perspectives' ICU nurses' challenges and supporting dying patients and their families.

Aim

The aim of this study was to describe ICU nurses' experiences of end of life care.

Method

In order to have a thorough overview of ICU nurses' experiences of end of life care, a literature review was used. The search process was performed through both PubMed and CINAHL databases. Author performed MeSH terms and key words in accordance to the study's aim. Then, the chosen key words were linked by (AND) and searched between 2004 to 2014 publications in both PubMed and CINAHL; search process in databases was described (Tables 2, 3 and 4). The inclusion criteria for this study is academic database resources such as MEDLINE and CINAHL, nursing discipline, articles up to date or limited to last ten years and qualitative and quantitative original primary scientific articles.

Data analysis

The selected articles were read several times and analyzed manually by the author. Then, findings that were relevant to the study's aim were digitally highlighted in word file. In the findings, two are as were focused on in accordance with the study aim. ICU nurses challenges of providing end of life care was highlighted in green colour and supporting dying patients and their families was highlighted in yellow colour. The findings were read again, then the coloured sections were divided and each colour copied into separate Word files. The coloured sections of text were organized in themes inspired by qualitative content analysis. Manifest content analyses were conducted. Manifest maintains the original thought and text without any change [13]. The author used the coloured sections of text, as meaning unit, then condensed the text and made an interpretation. The interpretation was done in close of the condensed meaning unit. The interpreted data were sorted into sub themes. The common sub themes were posted beside each other. Then the sub themes were sorted into the two themes, ICU nurses challenges of providing end of life care and supporting dying patient and their families (Table I). Copies of condensed meaning units were posted in the matrix. All these processes were conducted in Word files.

Validity of this study

When the validity is complex Lincoln and Guba (1985) suggest that validity criteria is based on the credibility and authenticity as a mark for quality. To enhance credibility and authenticity of the study, the academic database resources MEDLINE and CINAHL were used. The quality of selected articles was assessed and classified based on the classification guidelines of Berg, Dencker [14] and Willman, Stoltz [15].

The data analysis was inspired by qualitative content analysis methodology and it was used for handling the text systematically. The author checked that the interpreted data, condensed meaning units, sub themes and themes were consistent in accordance with the meaning unit. Then, every part that was checked was underlined to assure that every part was done. The author conducted this procedure to assure that interpretations and understanding of the results were rigorous and reliable.

Result

Of 59 recent articles, 12 articles were included in this study. Further, a reference list of the included articles was examined, for references that were relevant to the study aim, and four articles were added and a total of 16 articles that met the study criteria were included in this study. The majority of the selected articles were qualitative study (81%) and survey (19%).

The results of the study are organized into two main themes. The first theme is ICU nurses' challenges of providing end of life care while the second theme is supporting dying patients and their families in the ICU. The challenges are revealed in the following:

Intensive care unit environment incompatible with end of life care

The ICU environment may affect nurses' provisions of end of life care due to many tasks and crowded situations [16]. Moreover, patient privacy may not be considered in the ICU structure, as evidenced by lack of individual curtains and beds that are very close to each other. When the patients are naked in the ICU and only wear a gown sheet, this may affect nurses feeling toward patients such as a disrespect of patients' privacy and confidentiality of their information [17]. Further, the complexity of end of life care is not valued or understandable because the intensive curative culture may affect end of life care [18].

Conflict regarding goals of care

The physicians order aggressive medical managements that can lead to exhaustion of the dying patients [19]. In addition, aggressive medical management without benefit may frustrate nurses [20]. Besides, many issues may lead to continued aggressive medical management such as waiting for family to come or poor prognosis [21].

Instead, physicians may not be quite sure of the prognosis and effectiveness of care [22]. Therefore, patient prognosis may cause conflicts or disagreements among different specialized physicians that may affect the provision of end of life care. Disagreement in prognosis is a big issue; it confuses family members due to ambiguity and fearfulness [23]. However, it was considered that the big challenges of providing end of life care are dying patients who suffering from a painful intervention and family members who refuse the poor prognosis [24]. As well as, the fact that some medications for pain relief like morphine can cause respiratory depression, thus nurses have the challenge to administer these medications [23].

Nurses expressed that they are confused when providing two different types of care for various results, such as end of life care and curative care. End of life care is used to meet patients and their families' wishes and curative care is provided to improve the patients well-being [20]. Moreover, physicians' standards are different, thus meaning end of life care is different among physicians [25, 26].

Lack of involvement

Nurses usually have close contact with patients and their families but the nurses on the other hand often are not involved in the medical decision-making process, thus nurses continually expressed how important it was for them to be involved in the decision-making and communicating with family members [23]. However, nurses claimed that it is important to be more involved in the decision-making process because, nurses know the patients better than other professionals [27]

Different cultures

Different cultures of health care providers and patients may affect their feelings and the provision of end of life care. Thus, different cultures may lead to misunderstanding due to different beliefs and behaviours [26]. Moreover, nurses considered the patients belief about dying and death to be a large barrier to providing end of life care [22].

Communication with dying patients or their families, who have a different language, may affect nurses in providing end of life care [22]. Further, miscommunication between nurses and medical staff may affect the relationship with patients' families particularly when providing different opinions about plan of care and prognosis [21].

However, physicians often do not speak to the patient's families or they try to avoid the situation and thus, that can affect the relationship between physicians and families and it affects the end of life care [19, 24]. Yet, poor communication of physicians affects the end of life care and does not consider the dying patients' dignity [26].

Lack of knowledge or training

Since no training or resources are available, nurses do not know how to improve end of life care [26]. Novice nurses felt the fear and challenge of dealing with dying, death and patient's family. Novice nurses were not well prepared; they need training or support from their colleagues in order to be ready [19, 28]. Moreover, lack of experience and knowledge of providing end of life care are considered a big challenge [28]. However, it was noted that some factors might affect end of life care, such as workload and lack of palliative care services (Aslakson et al., 2012).

Families' lack of medical knowledge is considered a barrier for nurses to provide end of life care [23]. However, patients' families are rarely considered, therefore nurses should be taking care of patients' families socially, emotionally, and spiritually [28].

Lack of policies or protocols may affect the provision of end of life care. Junior nurses are supported by nursing leaders; however, this is not enough to deal with the complexity of end of life care [18]. When lack of protocols or guidelines for end of life care is expressed, more education for nurses to improve end of life care and how to communicate with patients' families is required [23].

Lack of emotional support

ICU nurses' emotions are affected due to daily basis exposure to critically ill patients [18]. Nurses, who provide end of life care are suffering emotionally, it may affect their spirit and feelings of hopelessness and depression. In addition, it was difficult for nurses to deal with family members who deny and refuse the reality of a patient's condition, this situation added to nurses' emotional stress. Further, nurses' emotions may be influenced by patients' conditions, such as level of alertness, age, duration of care and possibility of becoming an organ donor [29].

Nurses considered that the anxious families' reaction might affect their provision of end of life care and their emotions [29]. Further, the biggest challenge of providing end of life care is the patient's family and friends who frequently ask nurses for an update of the situation rather than a particular patient's partner. Usually dying patient's families are sad due to their patients' conditions and that may lead them to ask nurses continuously [21].

Feeling of unnecessary care

Nurses often felt that when an intensive therapy should not be offered, the caring may be considered as futile [27]. The priority of care is provided for patients who may survive, that may affect the provision of end of life care [29]. Further, when the patient dies, the health care staff often considered the situation as unnecessary care because they feel that the care is ineffective [29]. However, nurses frequently mention unnecessary care as the most challenging part of ICU care [23].

Supporting dying patient in the ICU

The second theme of this study was supporting dying patients and their families in the intensive care unit. These findings of support emerged with the following:

Nurses' feelings of providing end of life care

In order to support dying patients and their families, nurses need to be emotionally ready. Nurses' feelings may be improved due to having palliative care instead of curative care [23]. In addition, honouring self may improve nurses' feelings of providing end of life care [16]. However, the intimacy between nurses and team members is needed because it may create a feeling of security and safety among nurses [20].

Comfortable care

Nurses felt that they are responsible of providing care, comfort and protection to patients and their families. Further, pain relief and symptom management were considered important parts of end of life care. Besides, nurses are required to consider emotional and physical peace. Emotional peace may be achieved by meeting the patients' and families wishes and spiritual needs [20]. The provision of comfortable care includes taking care of hair, mouth, bathing, prevent pressure ulcer, provide spiritual support and administering sedation, analgesic and antimucolytics [18]. Moreover, nurses stated that they desired to maintain the comfort of dying patients [23].

Nurses need to offer themselves sincerely and give dying patients and their families certain attention. Moreover, touch is useful to communicate gentle care, sincerity, good wishes and warmth to dying patients and their families [16]. On the other hand, humour may be used in some sad situations [23].

Maintaining dying patients' dignity

Protecting dignity for dying patients includes physical care, privacy maintained, comfort and quality care [20]. Patients and families have the right to information and truth as well as involvement in the decision-making process [17]. Moreover, dying patients need to have a good look such as hair combed, hands are out and smell nice [30]. However, nurses are responsible to be patient advocates, such as maintaining the legal position and safety provisions for patients [30].

It was essential to maintain patient's dignity after death and provide care with high respect [20]. Further, nurses considered the deceased as a human being, thus care such as cleaning, dressing the body and respecting the deceased is continued [16].

Care of dying patient's family

Caring for patient's family was noted as a significant part of care for dying patients [20]. Nurses must frequently inform family members about the patient's health care situation and assure their understanding [31]. Family members desire accurate and continued communication. However, it is felt that building a good relationship with family is important because it may lead the family to trust in nurses for information [23, 25].

Supporting family's religious beliefs must be considered because it may help the family to access their spiritual value [28]. When a patient is dead, nurses should provide a peaceful bedside scene and private place for a patient's family to cry [24]. Moreover, it was thought that caring of the dying patient's family was important. The patient's family needs to be supported and educated about moving from aggressive to comfortable care [18]. However, in order to understand the family's thinking, it is important to listen and realise what a family's reflection is. Further, a systematic dialogue with the family members and avoidance of giving uncertain expectation were recommended [28].

Nurses, it was noted, have a desire for good memories for the family in the patient's final moment [23]. Therefore, nurses may support in creating memories for family members to keep, such as having a patient's hand print, gathering a patient's hair, bands and identity [18].

Patient's environment in the intensive care unit

Nurses thought that when the ICU is not created for dying patients, single rooms are required because it may help nurses to dignify death. Single rooms are an ideal environment for dying patients because they provide privacy, space and quietness. It helps to reduce patient and family exposure to others who are dying or have

died [18, 20]. Yet, nurses found that a familiar and calm environment may support dying patients to be at peace [31].

Having a designated contact with one of the family members is supportive [21]. Nurses are needed to contact a patient's family to visit and spend time with their patients [16]. Further, it is important to support the family presence because family members may provide care and improve the dying patient's emotion [19, 24]. However, it is found that nurses are responsible for assuring that patients are not dying alone and provide emotional support particularly when family is not present [20, 31].

Nurses may modify the patient's bedside environment from intensive care to be more homely, such as removing clinical equipment, changing hospital bed sheets with different colours, dimming the light and putting up pictures [18]. Moreover, providing temporary space around dying patients is significant. It provides chances for family members, relatives and friends to be with their dying patient [16].

Discussion

The result of this literature review has emerged insights of ICU nurses' experiences about end of life care in both: ICU nurses' challenges of providing end of life care and supporting dying patients and their families.

Intensive care unit nurses' challenges of providing end of life care

The ICU nurses' experiences of providing end of life care showed many obstacles that may affect the quality of end of life care. The result indicated that providing end of life care might be a struggle for nursing care and the personality of nurses. Many challenges of providing end of life care were identified. All these challenges may increase nurses' frustrations.

Because, non-technical or palliative care is not explicitly supported by critical care policy, critical care nurses are left without obvious guidelines to deal with dying patients [11, 12]. The result indicated a need for a particular protocol or guideline for end of life care. It is evidenced by Ranse, Yates [18] and Espinosa, Young [23]; they stated a lack of policies or protocols of providing end of life care. Earlier, three studies indicated a similar need for more end of life care education, standardised procedures and protocols [10, 32, 33]. When a basic guideline or protocol was not available, nurses may provide end of life care based on their experiences. This may affect the quality of end of life care. Moreover, the author suggested that guidelines or protocols are needed to guide the provision of end of life care in the ICU. For instance palliative care approach, may help nurses to get confidence and guide them in how to support dying patients and their families.

Twigg and Lynn [34] stated that many nursing colleges include some end of life care in the course's content. Further, the result indicated that lack of knowledge and

experiences are considered to be a big challenge to providing end of life care [28]. However, nurses usually contact dying patients and their families more than other professions [35]. Therefore, the author thought that not only are the guidelines or protocols needed but also that nurses must be well educated, prepared and trained about end of life care or palliative care approach. The nurses may face dying or death in any hospital setting, therefore, end of life care courses must be well involved in the nursing curricula in order to improve the quality of end of life care.

The result illustrated that both providing aggressive medical management without benefit and poor prognosis may frustrate nurses. Nurses may face emotional distress when providing care in these two situations, as well as it may obstruct nurses' ability of providing optimum care. However, Espinosa, Young [23] mentioned that nurses usually have close contact with dying patients and their families but are not involved in the decision-making process. The author suggested that physicians must share with nurses and other staff the decision-making responsibilities because nurses know the dying patients and their families more than other professions.

Further, it is found that miscommunication between nurses and medical staff may affect the relationship with patients' families particularly when providing different opinions about plan of care and prognosis [21]. Nurses must be more involved in the decision-making process in order to avoid different plans and improve end of life care.

Effective teamwork in the ICU may help to avoid different opinions about the plan and increase the consensus among team members. In teamwork, different staff will perform decision-making process and that may improve their communication and increase their satisfaction and awareness of the process. The teamwork may help nurses to cope with end of life care and reduce their emotional distress. The result indicated that the intimacy between nurses and teamwork environment is needed because it may create a feeling of security and safety [20]. Furthermore, Hansson, Foldevi [36] mentioned that the health care team includes different professions who plan, coordinate and provide interventions. From the teamwork, a holistic view of patients' situations may emerge. Yet, thinking and discussing patients and their family members' situations in the team help to view patients from a holistic perspective [37]. The author suggested that it is very important to have effective teamwork in the ICU and include palliative care because it leads to perform thoughtful decision-making from a holistic point of view. Effective teamwork may help to provide optimum care and meet the needs of dying patients and their families.

Wu, Chen [6] noted that the ICU environment does not improve the quality of life and patients' satisfaction. Further, the findings indicated that the ICU environment might affect nurses' provision of end of life care due to many tasks and crowded situations [16]. Patient's privacy was not considered in the ICU environment [17]. However,

it is important to support the family's presence because family members may provide care and improve dying patient's emotions [19, 24]. Therefore, single rooms are an ideal place because they provide space, privacy, quietness and reduce the exposure to other deaths [18, 20]. The author suggested that the ICU environment must be well structured with particular single rooms for dying patients. Single rooms may help to maintain space for family presence and quietness. It also allows dying patients to be with their families, relatives and friends. Single rooms may help nurses to provide end of life care effectively and meet dying patients' and their families' need.

Supporting dying patients and their families

Intensive care unit nurses are required to assess and evaluate patients and their families' needs by using holistic care [38]. The result of this study illustrated nurses' roles in supporting dying patients and their families. Nurses have a main role that may maintain dignity and peace for dying patients and their families in the ICU. Firstly, nurses' roles toward dying patients include providing comfort care, emotional and physical peace, pain relief, symptoms management, spiritual support, privacy, calmness, space for family and friends, maintenance of safety and being a patient advocate. In addition, McCallum and McConigley [20] stated that emotional peace may be achieved by meeting the dying patients' and their families' wishes and spiritual needs.

Secondly, nurses' roles toward dying patients' families include building a good relationship, providing dialogue, listening and realising their thinking, providing spiritual support, frequently informing family members about their dying patients situations, providing good memories, educating them about the move from aggressive to comfort care and providing a peaceful and private bedside scene. The author suggested that all these cares above might help nurses to support dying patients' families and meet their needs.

Bersten and Soni [39] stated that the responsibilities of nurses are different among health care systems and hospitals, but the most important factors may consist of flexibility and improvement of care. Thus, the author suggested that ICU nurses needed to be flexible and improving their care by following their guidelines and evidence-based resources. Moreover, nurses must consider that dying patients' quality of life is different because quality of life is individualized. Thus, flexibility and improvement are needed, as well as, thinking and discussing the dying patients and their families' situations in the team. In effective teamwork, ICU staff may gain knowledge from each other and that support may improve the quality of end of life care.

Conclusion

This study set out to describe the ICU nurses' experiences about end of life care in two areas. Firstly, ICU nurses' challenges of providing end of life care may affect the

quality of care. The lack of knowledge, protocols, procedure and ineffective teamwork regarding end of life care may frustrate ICU nurses. The provision of end of life care may affect nurses and nursing care. The author recommends that having courses about end of life care or obvious guidelines like palliative care approach is essential, as well as, integration of effective teamwork regarding end of life care in the ICU., particularly when it found that nurses have significant roles in supporting dying patients and their families. Moreover, it was stated that single rooms were recommended in the ICU. Further studies are needed to clarify issues concerning end of life care in the ICU and include the dying patients' perspective.

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WHAT WOMEN HAVE TO SAY ABOUT GIVING BIRTH IN SAUDI ARABIA

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Abstract

Background: Reporting the voices of women giving birth in KSA in order to inform policy developments within the Saudi maternity healthcare system is important to understand what the women want from the service and how to improve it.

Aim: to explore current birthing services in KSA from care consumers' perspectives by reporting women's birthing experiences and voices.

Methods: Within the first 24 hours after giving birth in one of the three selected public hospitals, 169 women shared their birth experience through their responses to an open-ended question on a questionnaire or by contributing in one-to one conversation with the researcher.

Findings: Thematically analysing 169 written responses and notes for conversation have produced two main categories which include themes and a number of sub-themes. The first and major category is "The relationship between women and care providers during birth" which is considered by most women the leading cause for better and satisfied birth experience if this relationship is characterised by support, respect, trust, and empowerment. The second category

is "Hospital rules and policies and childbirth experience" especially if these policies restrict women's choices and are brought into action without full explanation to women about why these policies are active.

Conclusion: Maternity care policy makers in Saudi Arabia have to consider women's voices in building and reviewing maternity policies and focus on empowering childbearing women and ensuring safe motherhood.

Key words: Childbirth, Maternity services in Saudi Arabia

1. Introduction and Literature Review

Maternity services in the Kingdom of Saudi Arabia (KSA) have been classed by the World Health Organization (WHO) as comparable with developing countries (1), concurrently, health services in KSA are experiencing rapid modernization, economic growth and diversity (2). Maternity services are also being influenced by these changes. In order to inform policy developments within the Saudi maternity healthcare system as part of the modernisation process it is important to understand what the women giving birth in KSA say about maternity services.

Australia was one of the first countries to conduct reviews of maternity services inviting submissions from women who have been consumers of those services. The review sought women's opinions, experience and degree of satisfaction experienced with the model of maternity care they received (3-7). Globally, scholars used women's birthing experience and their voices to reflect on maternity services. In Scotland, Sweden, Finland and the USA, reviews for maternity services were undertaken by exploring women's and/or health care providers' and policy makers' views about their experiences within the current maternity care system (8-11). It was suggested that more effort is required to improve the information provided to women and the choices available for women regarding the care they receive during pregnancy and birth (9). Trusting the system was found to be a major issue for those women who sought non medicalised care (10). Women reported feeling dissatisfied with the care they received despite the fact that they were deemed to have been provided quality care, as measured by the low perinatal mortality rates. Lack of choice and loss of personal autonomy in decision making regarding the care they received was reported as a major source of dissatisfaction (12, 13).

Maternity research in the Middle East region has been focused on reporting a number of clinical outcomes such as maternal and perinatal mortality and morbidity and common birthing practices in line with the medicalization of birth to reflect on the quality of the maternity services in these countries. A number of studies were conducted in Jordan and were considered to be among the first of their kind in the Middle East reporting women's childbirth experience. These studies show women's negative childbirth experience using different quantitative and qualitative methodologies (14, 15) (16). The lack of inclusion of women's personal experiences of maternity services evidences a gap in the literature resulting in limitation of maternity services review findings for the Middle East area.

The voices of Middle Eastern women until now have been silent and unreported, excluded from policy decisions related to quality of maternity care improvement. This situation is at odds with maternity services reviews and research findings globally, that sought the views of women, the key stakeholders of the service when it comes to the quality and safety of maternity services (11, 12, 16, 17).

This study reports Saudi women's experiences of the maternity care they received, viewed through the lens of safe motherhood to provide these women's voices with the opportunity to be heard and in doing so potentially influence maternity service policy developments in KSA.

2. Methods

2.1 Research design

This study is part of a large mixed method study that explored birthing services in KSA from two perspectives, women and health care professionals. Data was collected using the survey and interviews techniques to describe birthing services in Saudi Arabia and how these are viewed by women and maternity health care providers. This paper addresses the findings of the qualitative section of the study related to the women, as consumers of maternity care.

2.2 Study sites and participants

This study took place in three specialised maternity hospitals located in three main cities in Saudi Arabia; Jeddah, Riyadh, Ad Dammam. The number of births in each hospital is approximately 6000 births/ year (18). One of the three hospitals has achieved JCA international accreditation, and offers additional services to those offered by the other two hospitals and consequently experiences a strong demand by mothers seeking to give birth in this hospital. For example, the hospital that had JCA accreditation provides breast feeding classes and consultation through a breast feeding specialised clinic which is run by breastfeeding specialist. The other two hospitals provide routine maternity care. Ethical approval to conduct the research was obtained from Monash University Human Research Ethics Committee after the approval was gained from the three individual participating maternity hospitals in KSA.

2.3 Data collection

One hundred and thirty seven women shared their experiences related to the maternity care they received, in response to an open-ended question on a questionnaire. The questionnaire results are reported elsewhere.

Apart from meeting your new baby, and knowing that your baby had no serious health concerns, and apart from the pain you had during labour and birth, what was the best and the worse thing about your recent experience of giving birth?'. The questionnaires were distributed to all eligible women giving birth in one of the selected hospitals. Participating women were aged over 18 years, able to read and write Arabic language, had given birth within the previous 24 hours and cleared for discharge from hospital after giving birth to a single / multiple babies (Table 1). The questionnaires were collected in a designated sealed box at the reception desk in each ward. In addition, 32 of the participating women joined the study through one-to-one conversation about their last childbirth experience with the researcher, which was initiated during the distribution and collection of the questionnaires in the hospital wards.

Table 1: Participants' Demographics

Variable	No.	Percent %
Hospital sites		
Jeddah	49	36.0
Riyadh	45	33.1
AdDammam	42	30.9
Place of birth		
Saudi	129	94.2
Non-Saudi	8	5.8
Education		
Not completed high school	18	13.4
High school or equivalent	32	23.9
College but no degree	12	9.0
College	70	52.2
Postgraduate degree	2	1.5
Working Status		
Yes	23	17.0
No	112	83.0
First Child birth experience		
Yes (primipara)	46	33.8
No (multipara)	90	66.2

Those women either were unable or did not wish to write down their experiences, but wanted to participate in the study. Those women enjoyed having the opportunity to join the conversations to share their birth experiences especially when these conversations took place in a post-natal shared room. Within Saudi culture, women enjoy speaking to other women of their birthing experiences as part of an informal debriefing process providing opportunity to express feelings and fears. This unplanned outcome of this study (female conversations) enriched the qualitative data findings with the researcher notes that were written immediately after each conversation.

2.4 Data Analysis

All women's answers for open-ended question and researcher notes for women's quotes were recorded in Arabic requiring the data to be translated into English. Following translation thematic analysis was used to discover patterns hidden within the texts (19). Thematic analysis began with preparing the data by transcribing, translating and organizing the documents. Then the data was explored through reading and re-reading to a point where the researcher felt totally integrated and familiar

with the participants' words. After that, the researcher generated initial codes and searched for themes by grouping the similar descriptions and expressions coded until themes emerged. Next, the data analysis findings were validated by reviewing the themes with other research and repeatedly reflecting to ensure there was no missed classification and that the identified themes were valid representations of the participants' perceptions. The final steps were presenting the data analysis and producing the findings report, wherein the resulting themes were identified and described using the participants' words and comments (19, 20).

Rigor was maintained using the golden criteria of trustworthiness for qualitative research outlined by Guba and Lincoln (21), which has been applied widely for ensuring the rigor in most qualitative studies. The criteria, including credibility, dependability, confirmability and transferability were attained through reporting the findings by supporting each theme with women's own words and commentary reflecting women's voices clearly through each theme. Moreover, sufficient description for the sample, data collection and analysis is provided for any possible transferability (22).

3. Results

Thematically analysing women's written responses provided through returned questionnaires and researcher's notes for woman-to-woman conversations resulted in a variety of women's comments that reflect the approach of maternity care delivered in each hospital. Two main categories of comments evolved from the data collected regarding what women believed was the best and the worse things that happened to them during their experiences of maternity care. A variety of themes and subthemes have been reported within these two categories. The extracted categories and themes represent women's childbirth experience in Saudi Arabia. The first and major category is "the relationship between woman and care providers". The second category is 'hospital rules and policies and the childbirth experience'. (Table 2)

3.1 The relationship between women and care providers during childbirth

The relationship between women and care provider is one of medical domination in Saudi Arabian maternity services where women are expected to leave all important decisions to the staff (nurses and doctors) as they are perceived to know best. The first common experience reported by women relates to the maternity care providers' support and attitude towards the women and their respect and interactions with the women. This category has been divided into seven themes.

3.1.1 To be respectful "treating me with respect and not underestimating me as a human":

A number of mothers reported appreciation of the staff who treated them respectfully:

Table 2

Qualitative Themes	Sub themes
1-Woman-care providers' relationship during childbirth	<ol style="list-style-type: none"> 1- To be respectful "treating me with respect and not underestimating me as a human" 2- Explain everything "I did not have any choice in anything" "no enough information was given to me" 3- To be good listener and trust women's body "the best was listening to my fears and calm me down" 4- To provide safe care "I felt safe because I was in caring hands" 5- Caring and helpful staff "they treated me as a princess" 6- I needed support and cooperation "support during labour to relieve psychological stress" 7- To provide the care with a positive attitude "The staff treated us very badly, they have bad attitude"
2- Inflexible hospital rules and policies hindered pleasant childbirth experience	<ol style="list-style-type: none"> 1. Family Company "I thank everyone assist in spreading this culture" 2. Breast feeding initiative BFI policy "the worse thing was leaving the baby with the mother all the time"

P23: "In the labour and delivery room the staff treated me very well and with respect.

P134: "the best thing was treating me with respect and humanity and not underestimating me as a human".

Conversely, women who were treated with disrespect during their birth experience expressed their unpleasant feelings in their words.

P6: "The worse thing was ignoring me...and not respecting my psychological condition during labour".

P300: "I felt the difference between the treatment of the nurse who treats with more respect than the consultant did."

Similarly, a number of women described feeling embarrassed by some staff actions that they considered as disrespectful and humiliating:

P189: "the worse thing was that during suturing time after birth, the situation was bad as the Dr.(F) and complete medical team were in the room which embarrassed me."

C31: "during pushing and delivering the baby's head, some blood splashed over the doctor. So, she got angry and said "what brings me here?" what does she means by that? Why she is working in this area if it cause her disgust"

3.1.2 Explain everything “I did not have any choice in anything” “not enough information was given to me”:

A number of women expressed their satisfaction with the information and explanation they received during their last birthing experience. This was dominated by women who gave birth via caesarean section because of its surgical requirements and by those who had previous childbirth experiences.

P51: “as it was a caesarean section I knew everything”.

P173: “ the best thing was knowing the labour and birth stages”.

A group of women from the three hospitals expressed their needs for adequate ante-natal education and during birth explanations to understand what would be done to them during labour and birth and why.

P267: “I did not know what was the injection given with I.V? Also what was the injection given in my thigh?”

P12: “I did not have any choice in everything, the midwife left me without dilatation [episiotomy] till the baby came out without any assistance.”

Moreover, women sought for more information during pregnancy to correct any misconceptions about labour and birth and how to take care of themselves and their babies after birth.

P273: “when the labour pain started I had too much of (flower water + saffron) which increased the pain with no cervical dilatation occurring. I do not recommend taking anything without a doctor’s prescription”

P193: “Not enough information given to me about my stitches and how to take care of them.”

P80: “ “I refused to take a deep breath during pushing because that will draw the baby water...”

Some women needed more information about their childbirth experience than others.

P80: “my daughter had the umbilical cord tied around her neck and I think this is happened because they did not let me push when I was ready to, is that true?”

Another group of mothers questioned the presence and the role of some maternity care providers who attended their labour and birth.

P11: “I am a human, and having student trainer during my birth increased my fears. They should ask for my permission on that.”

P309: “the worse thing was having a male doctor and nurses in my birthing room while no need for that.”

A large number of women have not understood the breastfeeding policies implemented across a number of the hospitals included in this study. More antenatal education is required to adequately prepare women for the change. The main area that women required more

education before the birth was the mechanism of the breastfeeding and the reasons why breastfeeding was enforced immediately following the birth.

P100: “I do not know how to breast feed my baby and know how to latch my baby to my breast”

C10: This woman’s son was in the nursery and she did not know what to do with the milk accumulated in her breast.

3.1.3 To be good listener and trust women’s body “the best was listening to my fears and calm me down”:

Being cared by someone who listened to women’s needs was a significant factor in a good birthing experience for some participants:

P279: “the best was the doctor (F) and the nurse because they were the only two who listened to my fears and calmed me down during the birth”.

Women reported feelings of humiliation because no one listened to them when they were in labour. For example several women were very upset and described their experiences:

C31: “I was in pain and I almost kissed their hands to check me up “sit down just sit” they said. So I kept bothering them until they examined me and they found that I was 8 cm dilated.”

Then, P80 supports that:

P80: “I felt ready to push, but the nurse stopped me from pushing and called me a liar. Then someone came and examined me and saw my baby’s head clear just sitting there.”

Another woman described her experience of medical errors as a consequence of staff not listening to her.

P105: “The decision was to do caesarean section and they start assessing my sensations by pinching me and I told them that I felt that but the Dr.(M) said to me ‘you are joking’ and I replied ‘it is not the time for jokes, I am in the O.R and I am between life and death’. So they started cutting the incision and I felt the scalpel and the stretching; and off course I screamed very loudly. Then they said fine, fine and they gave me complete anaesthesia”.

3.1.4 To provide safe care “I felt safe because I was in caring hands”

Despite the fact that mothers believed that feeling safe during labour and birth required a good relationship with the staff and being informed of the progress, many women did not have that experience. These women felt unsafe which lead them to not have a pleasant childbirth experience.

P171: “the best thing was I gave birth in this hospital which has better care and safety for patients and informing patients about their rights”.

C31: “They documented my blood type as positive while I am negative, so when I asked for the injection they told me I do not need it. So, I told them I had an abortion before in this hospital and I had the injection. Finally, they did blood test for me. To be honest, I am very scared about my baby because of the wrong information they have so they may give my baby the wrong treatment”

Feeling safe for many women was associated with receiving kindness from their caregiver:

P204: “the best thing occurred to me during my last birth was the treatment of the health team with humanity. I felt safe in their hands”.

P219: “I felt safe because I was in caring hands. This was my best birth”.

3.1.5 Caring and helpful staff “they treated me as a princess”

Participating women reported their pleasant childbirth experience when in the care of helpful, caring staff, and described how this improved their psychological status and assisted in their ability to cope with the difficulties of their births:

P120: “the best thing was the help of the staff during labour and birth.”

P134: “The midwife who took care of me was better than the doctor (F) who I met. Those midwives knew everything about my condition better than the doctor herself and they treated it very well, my regards to them.”

Alternatively, one woman who reported receiving good care also expressed her feelings when encountering uncaring staff.

3.1.6 I needed support and cooperation “support during labour to relieve psychological stress”

Being cared by supportive cooperative staff was a primary factor in the mothers’ assessment of a better birthing experience:

P298: “the best thing was the medical team continuous support till the birth complete”

P281: “the medical staff team in the birthing room were very cooperative and understanding”.

Many women reported looking for support and cooperation from staff and not finding it:

P196: “I waited for 2-3 hours in the waiting area until I could not tolerate the pain anymore and I was deteriorating physically and psychologically.”

P279: “After all this I have been left in the birthing room till 4 pm without food or pain killer and with complete ignorance to all my calls and no kindness”.

Experiencing pain is the first characteristic for any birth experience; a number of women reported their needs for staff support and cooperation in order to gain control over pain.

P49: “one of the worse things was the labour pain it was very intense, but it was treated very well and I was satisfied”

P45: “the worse thing was the pain and contraction without analgesics.”

P12: “....I did not have any pain relief or oxygen [nitrous oxide]”.

Having an induction was not a pleasant experience for some women and they took the time to express their feelings about it.

P121: “the worse thing was being induced in my first birthing experience but then everything went good with staff help.”

Having vaginal examination and episiotomy or stitches are considered by most Saudi women as a sensitive uncomfortable procedure and one that increases women’s fears and anxiety.

P305: “they agonize us with vaginal examination.”

P146: “My birth was soft, easy because I did not have any operation or episiotomy”.

3.1.7 To provide the care with a positive attitude “The staff treated us very badly, they have bad attitude”:

Many mothers described what they considered to be bad birth experiences:

P195: “the worse things were the nervousness of the nurses and doctor (F)”.

P116: “the worse thing was the treatment by the midwife or nurse. It was bad to the extent that she told me if you have any problem go out of the hospital”.

C18: “the staff are treating us very badly, they have a bad attitude”

The experience of being treated badly during labour and birth affected women’s ability to cope. Some women were unable to overcome this experience:

C28: a woman said after a quiet period “the doctor treated me badly and kept saying “come on come on open your legs stop (Dalaa) [this word means acting like a kid or speaking softly]”.

P273: “Everyone I met treated me with respect except the vaccination nurse, she had a very bad manner and had religious racism and no kindness”.

Several women who experienced staff with bad attitude reported that this situation prevented them from speaking out for themselves and their babies.

P89: “after she took the baby from me she threw him on cot, he was hurt and cried and I could not say anything because I was tired”.

C12: “this woman was very upset because the nurse

forced her to breastfeed her twin. "I was scared and cried as the nurse pinched and hit my thigh in a funny way to make me breastfeed but I did not like the way the nurse treated me".

3.2 Hospital rules and policies and childbirth experience:

Childbirth experiences in Saudi Arabia are influenced by what is offered and allowed in the hospital in which the woman chooses to give birth. For example, having the husband or family member attending the birth is not a choice offered to women in some hospitals in Saudi Arabia. On the other hand, establishing a new policy such as BFI (Breastfeeding initiation) required better explanation to women in order to prevent any misunderstanding or misinterpretation.

3.2.1 Family Company "I thank everyone who assists in spreading this culture":

For some women having their husband or a family member during labour and birth was an essential element to improving their birthing experience.

P11: "the worse thing was not allowing someone to stay with the patient [woman] although this is the time when they are desperate to have someone with them".

P84: "allow husbands of women to attend the labour, and this should be optional".

P161: "the best thing happened during my birth experience and I thank everyone who assists in spreading this concept which is allowing my husband to be with me in birthing room, because him being beside me helped me a lot and made my birth easier."

C24: "They did not allow my mother until the doctor came and allowed her"

3.2.2 Breast feeding initiative BFI policy "the worse thing was leaving the baby with the mother all the time"

Participating women were not happy with the 'rooming in' policy introduced by the hospital to support and encourage breastfeeding (BFI). Women expressed their needs for family company during their hospital stay to help them to take care of the baby.

P49: "I was not expecting to care of my daughter because I was in a very bad condition, I was not able to control myself how can I provide care to my daughter".

P214: "the worse thing was leaving the baby with the mother all the time, and not helping the mother changing the baby, because the mother needs someone to help".

C26: a primi (caesarean section) woman was so confused and very overwhelmed....She said "I am very depressed from the pregnancy and birth, I need someone with me I am primi and gave birth caesarean section".

On the other side, women were unaware that this policy has been done for a purpose and interpreted this as neglect on the nurses' behalf. This issue caused an

inconvenience for the women and affected their birthing experiences.

C30: "the important thing is their limited care to the baby".

P309: "...Also they did not care of the baby after birth but leaving that to the mother while she is tired"

P12: "...Nurses refuse to provide mums with milk for babies although they knew there is no milk still in their breasts."

P38: "Looking for the nursery for healthy baby to take them from mothers after birth, so she can rest for at least three hours".

4. Discussion

Women were willing to share their birth experiences and were not hesitant to make the most of this opportunity to reflect on what could be changed to improve experiences for other women. The relationship between women and maternity care providers was reported as the dominant factor that influences Saudi mothers' satisfaction with the maternity care they received. The most empowering experience for these women was to be cared for by staff with a positive attitude, someone who provided continuous support, who showed respect for the person and who could be trusted to ensure their safety. This finding has been supported by a number of studies which reported that positive, trusting and cooperative relationships between women and maternity care providers were the greatest influence in women feeling empowered when giving birth (23). The pain associated with labour and birth can be very difficult experiences for women who are feeling vulnerable and unsafe. Women's ability to manage pain during labour is negatively influenced when feeling unsupported and unsafe (24, 25).

Women reported feeling dissatisfied with their birth experiences as a result of lacking trust in the maternity care providers who did not give them the respect they deserved. Respect was not shown when staff did not provide them with necessary information on their care and the reasons this care was required, and or not listening to their needs or ignoring their distress. This is evidenced when some participating women took the opportunity to ask the researcher questions about their birth or the condition of their baby. Educating women regarding what to expect during pregnancy, labour, birth and breast feeding, and explaining the role of each member of the maternity care team is a crucial element in the development of a respectful trusting relationship which in turn leads to safe maternity care. The need to be able to trust maternity care providers is closely linked with the degree of respect that was shown to women by the staff (25-28).

Having family members to provide support during labour and birth and post-natally is one of the choices available for women in most maternity settings within developed countries. The attendance of family during labour and birth choice was incorporated into hospitals' policies

because of its strong relationship with the women feeling empowered, in control of their birth and being more satisfied with their birth experience. This positive relationship was evidenced by a number of studies conducted worldwide (25, 27, 29). For Saudi women, it was a different story as they reported their dissatisfaction and loss of control as a result of not having the choice to have a family member attending their labour and birth. Only 22% of public hospitals in Jeddah one of the biggest cities in KSA allow a companion to attend labour and birth (2). Nevertheless, participating women highlighted their needs for family support through labour and birth as this would help them feel safe, satisfied and in control. Consequently, women must have the choice to have a family member throughout their labour and birth. To do so maternity policies in KSA required some modification and updating according to women's preferences and latest evidence regarding having family company during labour and birth.

Moreover, women misunderstood the application of the BFI ten steps policy as recommended by WHO within public Saudi hospitals (30). They interpreted the implementation of the policy as maternity caregiver neglect and carelessness, which was accentuated in women's words describing their experiences. Having their babies with them 24 hours and the fact that there is no bottle feeding provided to babies are the reasons causing women's misinterpretation and dissatisfaction with birthing experiences. Changing this policy is not the answer. However, women need to be informed about this policy early during pregnancy, and they must be educated why and how the application of this policy is important (30). This information can be delivered to pregnant women during antenatal education sessions, which will prepare them to accept the care delivered to them later and protect the staff from being misinterpreted.

This study is the first to explore women's birthing experiences in public hospitals in Saudi Arabia. Women have highlighted their needs for better, more satisfying birthing experiences. The overarching need for all women is to be cared for by supportive cooperative positive maternity care providers who deliver safe birth care. In addition to the staff support, women were looking for family support throughout labour and birth as this is not currently an option for them in most public hospitals in Saudi Arabia while it was one of the major women's claims. Furthermore, women showed their demand for more information about labour and birth, that could be fulfilled with frequent accessible affordable antenatal educational classes. This demand also requires continuous explanation and consultation from the staff during labour and birth. This research sets off the base for further research reporting Saudi women's perspectives, voices and experiences regarding maternity care they receive.

The limitation of this study is that the sample excludes women who do not read or write Arabic. Also, while this study was conducted within three large public maternity

hospitals that have high birth rate, this is limiting the representativeness of the sample of the study.

Conclusion

Maternity care policy makers and maternity care providers in Saudi Arabia have to consider empowering childbearing women and ensuring safe motherhood. This can be accomplished by reviewing and updating maternity policies with women's preferences and latest up to date research evidence. This study provides findings that focus on empowering women throughout labour and birth with the staff and family support, adequate education and explanation, and availability of choices. The main updates that this study could add are introducing antenatal educational classes during pregnancy, explaining and consulting women about everything.

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KNOWLEDGE, ATTITUDE, AND PERFORMANCE TOWARDS CRACK ABUSE SIDE EFFECTS ACCORDING TO THE STUDENTS GENDER AND KIND OF FACULTY

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Abstract

Introduction: Today, Substance Abuse is one of the most important problems in the world, which is known as an ominous and ruinous crisis that can increase human mortality rate all over the world. Crack abuse is nowadays considered the leading cause of consulting withdrawal institutes, which reveals the increasing addiction rate with this high-risk substance in Iran.

This study design was based on a cross-sectional method and the main aim is to determine the Knowledge, attitude, and performance towards crack abuse side effects according the students gender and pertinent faculty.

Methods: The present descriptive and analytical research Knowledge, attitude, and performance towards crack abuse side effects according to the students gender and the research population (n = 906) consisted of all the students from different faculties of Islamic Azad University, Islamshahr Branch and were selected using the stratified sampling method and were allocated to respective groups according to gender. The data collection tool was a questionnaire. The research data were analyzed using the t-test, and also Chi-square and ANOVA tests and the Pearson correlation coefficient.

Result: Data related to the measurement of the students 'knowledge , attitude, and performance regarding the short-term and long-term crack abuse side effects are shown in Tables 1, 2, 3, and 4. The results obtained revealed that students' needs assessment towards crack abuse side effects at three levels, namely their knowledge,

attitude and performance were lower than 50%; such that 58.2% had a low-level knowledge, 55.5% had a negative attitude, and 49% of them had an unfavorable performance level.

Conclusion: The findings related to the comparison of the mean male and female students' knowledge , attitude, and performance regarding crack abuse side effects revealed a statistically significant correlation at the areas of attitude and performance; also a statistically significant correlation was observed between gender and attitude (mean attitude among females and males was 71.10 and 68.97, respectively) and between gender and performance (mean performance among females and males was 78.5 and 73.9, respectively), i.e. attitude and performance was higher among females. (P < 0.000 in all cases).

Key words: Knowledge, attitude, performance, crack abuse, side effects, students' gender, kind of faculty

Introduction

Today, Substance Abuse is one of the most important problems in the world, and is known as an ominous and ruinous crisis that can increase human mortality rate all over the world. Crack abuse is nowadays considered the leading cause of consulting withdrawal institutes, which reveals the increasing addiction rate with this high-risk substance in Iran. Addiction has also caused many social problems in Iran. Several important socio-economic events such as a petroleum-related economy, the 8-year war against Iraq, population overgrowth, expanding global communicative technology, increased expectations of the young generation, the trend of industrial development and the related complications such as immigration and unemployment, are all issues that make the Iranian society more vulnerable to addiction (1).

Nearly 11% of the young substance abusers in Iran don't believe these substances cause addiction (2), and the satisfaction achieved after abuse often causes tendency for continuous abuse. Therefore, neglecting the accelerated widespread prevalence of substance abuse and the related complications among the student population; and the production of laboratory synthetic substances such as crack, ecstasy, and crystal (suggesting an impending and widespread threat) on one hand, and the lack of related research, reliable and basic statistical data; unknown motives, methods, patterns, and prevalence of substance abuse among students; unknown relationship between substance abuse and problematic situations (such as motiveless and decreased efficacy of learning, living away from family members, living in dormitories, organic and mental illnesses, feeling loss of identity, and promiscuous sexual behavior) on the other hand (3), reveals the necessity of intervention by different social groups (especially health care professionals), as they can play an important role in formulating educational programs; and as the first step in formulating an educational program is determining students' needs assessment, the most effective approach for determining an appropriate educational content is needs-analysis. Therefore, coordination between educational programs and needs assessment is an important issue that needs to be considered. Thus, the researchers aimed at determining students' needs assessment towards crack abuse side effects in order to provide a perspective of the current situation for authorities in the area of addiction and to take a step forward in decreasing the tendency of the Iranian young population towards this internecine disaster.

Materials & Methods

The present descriptive and analytical research Knowledge, attitude, and performance towards crack abuse side effects according to the students' gender and the research population (n = 906) consisted of all the students from different faculties of Islamic Azad University, Islamshahr Branch and were selected using the stratified sampling method and were allocated to respective groups according to gender. The data collection tool was

a questionnaire. The research data were analyzed using the t-test, and also Chi-square and ANOVA tests and the Pearson correlation coefficient.

Result

Result of the subjects, who were 18-35 years old; 40.2% were female and 542 were male. The results obtained revealed that towards crack abuse side effects at three levels, namely their knowledge, attitude, and performance were lower than 50%; such that 58.2% had a low-level knowledge, 55.5% had a negative attitude, and 49% of them had an unfavorable performance level. 33.1, 33.9, 11.5, 10.7, and 10.5 percent of the subjects were selected from the Humanities & Management faculty, the Engineering faculty, the Basic Sciences faculty, the Physical Education faculty, and the Art faculty.

Data related to the measurement of the students 'knowledge, attitude, and performance' regarding the short-term and long-term crack abuse side effects are shown in Tables 1, 2, and 3. The results obtained revealed that students' needs assessment towards crack abuse side effects at three levels, namely their knowledge, attitude, and performance were lower than 50%; such that 58.2% had a low-level knowledge, 55.5% had a negative attitude, and 49% of them had an unfavorable performance level.

The findings related to the comparison of the mean male and female students' awareness, attitude, and function regarding crack abuse side effects revealed a statistically significant correlation at the areas of attitude and function, such that a statistically significant correlation was not observed between gender and awareness regarding crack abuse side effects (mean awareness among females and males was 39.9 and 38.19, respectively); but a statistically significant correlation was observed between gender and attitude (mean attitude among females and males was 71.10 and 68.97, respectively) and also between gender and function (mean function among females and males was 78.5 and 73.9, respectively), i.e. attitude and function was higher among females. Accordingly, the findings of Torabi, Mohammad revealed a statistically significant correlation between gender and smoking (4), and the results of research performed by Zia-Eddini showed that 26.5% of the males and 11.5% of the females had a positive history of substance abuse on at least one occasion, which were consistent with the results of our study (5).

The findings regarding needs assessment towards crack abuse side effects and the pertinent faculty revealed a statistically significant correlation at the areas of attitude and function, such that the students of the Engineering faculty and the Physical Education faculty had the least and the most awareness levels (means = 36.67 and 40.05, respectively); in addition, the students of the Engineering faculty and the Humanities faculty had the least and the most attitude levels (means = 67.18 and 73.38, respectively); also, the students of the Engineering faculty and the Humanities faculty had the least and the most

Table 1: comparison of Mean and standard deviation students' knowledge, attitude, and performance towards crack abuse side effects in Islamic Azad University; Islamshahr Branch according to Sex

sex	BOY	GIRL	TEST RESULT
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	T test
Knowledge	26.7±38.1	26.3±39.9	t=0.94 p <0.33
Attitude	14.2±68.79	71.1±13.6	<u>p <0.02</u>
Performance	73.9±26.8	78.5±23.8	<u>p <0.002</u>

Table 2: comparison of Mean and standard deviation students' knowledge ,attitude, and performance towards crack abuse side effects in Islamic Azad University; Islamshahr Branch according to kind of faculty

Kind of Faculty	Humanities & Management	Engineering	Basic Sciences	Physical Education	Art	Test result
	$\bar{x} \pm SD$					P value
Knowledge	24.3±40	28.3±36.6	25.9±41.1	28.4±40	26.4±37.5	p <0.428
Attitude	12.9±72.3	14.7±69	13.6±70.5	14.7±69	12.7±70.5	<u>p <0.000</u>
Performance	22.7±80.8	24.6±78.1	27.2±78.5	26.4±78.1	20.1±79.6	<u>p <0.000</u>

Table 3: comparison of Mean and standard deviation students' knowledge, attitude, and performance towards crack abuse side effects in Islamic Azad University; Islamshahr Branch according to Age

Age group	<20	20-22	23-25	26-28	>29	Result test
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	P value
Knowledge	26±41.8	26.2±31.4	26.9±41.7	27.7±37.7	27.6±40.7	<u>p <0.086</u>
Attitude	14.4±71.5	14.9±68.7	13.5±70.4	13.5±68.9	13.3±70.8	p <0.181
Performance	26.1±75.1	26.4±73.8	24.5±76.7	19.4±84.7	24.5±80.5	<u>p <0.013</u>

attitude levels (means = 67.18 and 73.38, respectively); also, the students of the Engineering faculty and the Humanities faculty had the least and the most function levels (means = 80.88 and 67.9, respectively).

The variance analysis test showed a statistically significant correlation between age and function, and the highest needs assessment regarding awareness was observed among students under 20 years old (mean = 41.8), and the highest attitude revealed a mean of 80.5, although the highest performance was observed among the students over 30 years old. The results of research performed by Shafiq, Madjid revealed that male gender is considered a risk factor for substance abuse among the medical students in Pakistan (6).

In addition, the 26-28 year old and the 20-22 year old subjects had the best and the worst function levels (means = 84.7 and 73.84, respectively); students under 20 years of age revealed the lowest attitude level (mean = 71.52). The results of research performed by Kumar revealed that substance abuse (especially in combination form) has increased among the medical students, especially among the male students, and that the long duration of education affects substance abuse (7).

Conclusion

The results of the present research regarding students' needs assessment towards short-term and long-term crack abuse side effects revealed that short-term awareness trends toward low-level as compared to long-term awareness; students' long-term attitude towards crack abuse side effects trends towards negative. Generally, students' needs assessment towards short-term and long-term crack abuse side effects was at the high level, but rendering needs assessment towards short-term crack abuse side effects had a higher priority, i.e. their needs assessment is primarily based on short-term; in addition, students' needs assessment regarding long-term function trend towards unfavorable.

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ZIKA VIRUS UPDATE AND BIOLOGICAL CONTROL OF AEDES SPECIES MOSQUITO (A. AEGYPTI AND A. ALBOPICTUS)

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Abstract

This paper provides an update on the Zika virus and as the MEJFM is going to press, the WHO advises that there is now an increasing accumulation of evidence of an association between the Zika virus and microcephaly. It may take a further 4-6 months to prove.

The paper also covers recently announced Australian research and successful 5 country trials on the biological control of the carrier mosquito, the *Aedes aegypti* mosquito.

Keywords: Zikavirus, Dengue fever, chikungunya virus, biological control, Wolbachia

Introduction

As the ME-JN is going to press, the WHO advises that there is now an increasing accumulation of evidence of an association between the Zika virus and microcephaly. It may take a further 4-6 months to prove.

WHO will convene an advisory group on mosquito control in 3-4 weeks (end of March 2016).

The WHO declared the outbreak an international health emergency on February 1, 2016 citing a 'strongly suspected' relationship between the Zika virus, which is carried by mosquitoes, and infection in pregnancy and microcephaly.

The disease has been linked to severe birth defects in Brazil and has spread to nearly 30 countries and territories.

But also as we are going to press, Australian researchers at the University of Melbourne, Australia who have been working on a biological control approach to Dengue fever have announced on the 19th February, 2016 good results of biological control of the carriers, the *Aedes aegypti* mosquito. The same mosquito is responsible for carrying the Zika virus and the chikungunya virus as well as Dengue fever.

The biological control involves releasing populations of mosquitoes that have been infected with a commonly occurring species of bacteria, called Wolbachia.

The bacteria effectively inoculate the mosquitoes against the dengue virus. The treated populations then out-compete their dengue-carrying rivals, greatly reducing their numbers. Small-scale trials of the strategy started in 2011, and have so far been carried out in Queensland (Australia), Vietnam, Indonesia and Brazil.

The largest trial so far started in 2014, with the release of Wolbachia-infected mosquitoes throughout Townsville, northern Australia.

The viruses that cause dengue and Zika are very closely related. Both are members of the Flavivirus family, which also includes the yellow fever and West Nile viruses. Both are transmitted by the same species of mosquito, known as *Aedes aegypti*.

“We have done the experimental work and it’s currently winding its way through pre-publication,” said researchers.

“It shows that Wolbachia blocks Zika in an almost identical way, so where we’ve put it out to block dengue the mosquito populations are also resistant to Zika.”

With the possibility, even if it’s a small possibility, that dengue viruses might evolve resistance against wolbachia an ‘insurance policy’ has also been created by Australian scientists working on the problem so that “we could have a solution to cover the possibility that Dengue viruses would evolve resistance to wolbachia.

This second wolbachia mosquito combination will effectively prevent the possibility of Dengue viruses escaping the blocking effect of wolbachia”.

It will take time to verify and inoculate all mosquito populations, so in the meantime I will follow with an overview of Zika, its mode of transmission, treatment approaches and a list of currently infected areas.

In one of the first studies published related to the recent Zika outbreak, researchers in Brazil documented the eye abnormalities in babies with a traditionally rare condition called microcephaly. Babies with the condition are born with abnormally small brains, which can be connected with other complications. It’s not unusual for vision problems to be associated with microcephaly.

They found that in one-third of babies with microcephaly - after a presumed Zika infection before they were born - there was an additional eye abnormality that could threaten their vision.

Ten of the 29 babies observed had irregularities in one or both eyes, and about 80% of the mothers reported Zika-like symptoms during their pregnancy.

For the most part, only about one in five people with Zika ever shows symptoms, which most commonly include fever, rash, joint pain, and red eyes, though there have been cases of a temporary neurological disorder Guillain-Barre Syndrome associated with Zika.

It’s Zika’s connection to microcephaly that’s particularly concerning. This connection has raised concerns about pregnant women contracting the virus.

The best way to prevent infection is to avoid being bitten by the mosquitoes that transmit the disease, by either avoiding travel to areas where the virus is being transmitted, or wearing long clothes and using mosquito repellent.

Regions/Countries where Zika has been found

AMERICAS

- Barbados
- Bolivia
- Brazil
- Colombia
- Commonwealth of Puerto Rico, US territory
- Costa Rica
- Curacao
- Dominican Republic
- Ecuador
- El Salvador
- French Guiana
- Guadeloupe
- Guatemala
- Guyana
- Haiti
- Honduras
- Jamaica
- Martinique
- Mexico
- Nicaragua
- Panama
- Paraguay
- Saint Martin
- Suriname
- U.S. Virgin Islands
- Venezuela

OCEANIA/PACIFIC ISLANDS

- American Samoa
- Samoa
- Tonga

AFRICA

- Cape Verde

Currently there has been no evidence of Zika infected mosquitos in the Middle East.

Medical Aspects for Healthcare Providers

It is not yet known if a woman who is not pregnant and is bitten by a mosquito and infected with Zika virus, will have a risk with future pregnancies.

When a woman is infected with Zika virus while she is pregnant the virus usually remains in the blood of an infected person for only a few days to a week. The virus will not cause infections in an infant that is conceived after the virus is cleared from the blood. There is currently no evidence that Zika virus infection poses a risk of birth defects in future pregnancies. A woman contemplating pregnancy, and who has recently recovered from Zika virus infection, should consult her healthcare provider after recovering.

For those babies infected with Zika, babies with microcephaly can have a range of other problems, depending on how severe their microcephaly is. Microcephaly has been linked with the following problems:

- Seizures
- Developmental delay, such as problems with speech or other developmental milestones (like sitting, standing, and walking)
- Intellectual disability (decreased ability to learn and function in daily life)
- Problems with movement and balance
- Feeding problems, such as difficulty swallowing
- Hearing loss
- Vision problems

These problems can range from mild to severe and are often lifelong. In some cases, these problems can be life-threatening. Because it is difficult to predict at birth what problems a baby will have from microcephaly, babies with microcephaly often need close follow-up through regular check-ups with a healthcare provider to monitor their growth and development.

To date, there are no reports of infants getting Zika virus through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where Zika virus is found.

Spread of the virus through blood transfusion and sexual contact have been reported.

Symptoms

- About 1 in 5 people infected with Zika virus become ill (i.e., develop Zika).
- The most common symptoms of Zika are fever, rash, joint pain, or conjunctivitis (red eyes). Other common symptoms include muscle pain and headache. The

incubation period (the time from exposure to symptoms) for Zika virus disease is not known, but is likely to be a few days to a week.

- The illness is usually mild with symptoms lasting for several days to a week.
- People usually don't get sick enough to go to the hospital, and they very rarely die of Zika.
- Zika virus usually remains in the blood of an infected person for about a week but it can be found longer in some people.

Diagnosis & Reporting

Based on the typical clinical features, the differential diagnosis for Zika virus infection is broad. In addition to dengue, other considerations include leptospirosis, malaria, rickettsia, group A streptococcus, rubella, measles, and parvovirus, enterovirus, adenovirus, and alphavirus infections (e.g., Chikungunya, Mayaro, Ross River, Barmah Forest, O'nyong-nyong, and Sindbis viruses).

Preliminary diagnosis is based on the patient's clinical features, places and dates of travel, and activities. Laboratory diagnosis is generally accomplished by testing serum or plasma to detect virus, viral nucleic acid, or virus-specific immunoglobulin M and neutralizing antibodies.

In 2016, Zika virus disease became a nationally notifiable condition. Healthcare providers are encouraged to report suspected cases to their state or local health departments to facilitate diagnosis and mitigate the risk of local transmission. State health departments are encouraged to report laboratory-confirmed cases to CDC through ArboNET, the national surveillance system for arboviral disease.

There are no commercially available diagnostic tests for Zika virus disease.

During the first week after onset of symptoms, Zika virus disease can often be diagnosed by performing reverse transcriptase-polymerase chain reaction (RT-PCR) on serum. Virus-specific IgM and neutralizing antibodies typically develop toward the end of the first week of illness; cross-reaction with related flaviviruses (e.g., dengue and yellow fever viruses) is common and may be difficult to discern. Plaque-reduction neutralization testing can be performed to measure virus-specific neutralizing antibodies and discriminate between cross-reacting antibodies in primary flavivirus infections.

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