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FROM THE EDITOR

Abdulrazak Abyad
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(Chief Editor)

This is the third issue this year that is rich with a number of review papers. A paper from Lebanon looked at the challenges involved in developing geriatric nursing in the Middle East. As this century progresses nurses in the Middle-East will be increasingly concerned with the aging population. Older Arabs utilize extensively more healthcare services than more youthful Arabs and their needs are often multifaceted. The health care system frequently fails to provide high-quality services in the best way to address their issues. In reality, the instruction and preparing of the whole human services workforce regarding the scope of necessities of older adults remains woefully deficient. Enrollment and maintenance of all types of health care workers is an important problem, particularly in long-term care settings. Unless move is made promptly, the health care workforce will not have the limit (in both size and capacity) to address the issues of more older patients later on.

A paper from Jordan looked at the application of Psycho-Education for Families that have Schizophrenia Patients. Psycho education is defined as systematic, structured, instructional information on the disorder and its treatment, which includes combined aspects of emotional education in order to enable the participants of patients as well as family members to cope with the illness. Family psycho education refers to a wide range of programs that provide education, support, and guidance to families about coping style with mental illness, especially to family members with members with mental illness such as schizophrenia that is considered a severe, chronic brain disorder that becomes difficulty for persons, to understand the difference between real and unreal situations, to logically think, to have appropriate emotional responses, and to behave appropriately at home or in social situations. Not only patients with schizophrenia suffer greatly from this illness, but also their family members. This literature review shows that Implementing the family psycho education programs to patients with schizophrenia often allows family to play a vital role as caregivers, promote recovery, and maintain mental health care services, as well applying the family psycho-education program on mental health care settings affects the mental care outcome in many dimensions.

A paper from the Hashemite University School of Nursing looked at mental health.

In 2013 the WHO defined the mental health as a condition of well-being in which all persons realizes their own potential, can adapt with daily stressors, can work positively, fruitfully and productively, at the same time this person must be able to make a contribution for their community (WHO, 2013). Mental health focused on human relationships with others and paying attention to persons who live around this human and focuses on how they can affect this person positively especially when this person is considered as a mentally ill patient. The authors discussed the problem of social support and mental health.

A second paper from Jordan looked at the Effect of Aerobic Exercise on the Fatigue Level among Adult Cancer Patients Post Bone Marrow Transplant. The purposes of this evidence base paper are to find the best evidence related to using aerobic exercise to mange post bone marrow transplant fatigue, also to answer the PICO question which had been addressed in this study. An electronic literature search was conducted using data bases like CINAHL, Pubmed, and Ovid nursing to found the relevant articles according to specific inclusion criteria, the search process yield finally twelve articles. This paper found a moderate to strong evidence for using aerobic exercise to manage post bone marrow transplant fatigue. Aerobic exercise can be carried ut safely, and directly post bone marrow transplant, also adhering to a specific programmed aerobic exercise with the treatment plan will decrease the fatigue level post transplant.

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GERIATRIC NURSING: THE CHALLENGES IN THE MIDDLE EAST

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Abstract

As this century progresses nurses in the Middle-East will be increasingly concerned with the aging population. Older Arabs utilize extensively more healthcare services than more youthful Arabs and their needs are often multifaceted. The health care system frequently fails to provide high-quality services in the best way to address their issues. In reality, the instruction and preparing of the whole human services workforce regarding the scope of necessities of older adults remains woefully deficient. Enrollment and maintenance of all types of health care workers is an important problem, particularly in long-term care settings. Unless move is made promptly, the health care workforce will not have the limit (in both size and capacity) to address the issues of more older patients later on.

Key words: **Nursing, Geriatrics, Middle East**

Background

The aging of the baby boom population, joined with an increase in life expectancy and a diminishing in the relative number of more youthful persons, will create a setting where older adults make up a much larger percentage of the Regional population than has ever before been the case. While this population surge has been anticipated for quite a long time, little has been done to set up the health care workforce for its coming. A significant change in the delivery of health and social care for older people, will be portrayed by shorter, more medically intense spells in hospitals, extension of care in the community, and a huge increment in homes care. The present strategy drive is the advancement of autonomy inside community care structure through an accentuation on rehabilitation and re-enablement.

Amidst this rapid progress is the defenseless older person whose mind boggling requirements are met by a range of providers. The more defenseless a man is, the more power dwells with the different providers; the individual turns into a detached beneficiary of services instead of a dynamic member in choices about care.

A double need has emerged: to enhance the mentalities and information base of those providing care; and to enhance the older individual's pathway and experience as they move through an extensive variety of continually evolving provisions. Older individuals are the significant clients of health and social care. Various elements have changed the pattern of this utilization in late decades. More noteworthy access to more powerful medicinal medications, enhanced lodging conditions, more far reaching social consideration provision and closure of the customary long term care hospitals have all had influence in this change. For some more older individuals, and especially the most frail, the pattern of need is of some level of continuing care, interspersed with acute episodes that require quick access to medical treatment, nursing and therapy.

As hospital stay was shortened, this coupled with the lack of rehabilitation facilities led to the development of the home care sector. A number of reports (1) and national audits (2-4) in the late 1990s showed that the lack of rehabilitation facilities were insufficient, in addition to fragmentation of care was leading to systematic inefficiency. There is a need to coordinate elderly services in a comprehensive intelligible manner, under the general vital heading of advancing autonomy and independence. The rising acute hospital admission rate was mostly identified with inappropriate admissions and somewhat to admissions related to previously incomplete rehabilitation, and therefore conceivably preventable (5).

Model for Training of Nursing in the Aging Field

Therefore there is great need to develop and train nurses in the field of ageing. There is a need to develop and encourage the specialty of geriatric nursing. Professional nurses represent the main sector of the health care workforce accountable for patient care in most health care settings. In the USA the professional nurse workforce comprises registered nurses (RNs) and advanced practice registered nurses (APRNs), who are RNs who followed master's degree programs. With limited exemptions, all professional nurses are part of the care of older adults. Notwithstanding immediate consideration, professional nurses oversee licensed practical nurses (LPNs) and certified nurse aides (CNAs). In the United Kingdom they come with the model of Older People's Specialist Nurse (OPSN). This is considered in the UK as an important part of the strategy to improve care of older people, in hospitals, in the community, in care homes and across the service interfaces.

The essential role of OPSN is that of a specialist clinical expert working with older individuals and their families. The role incorporates clinical examination, interview, educating and administration (6-8). To be formally perceived as an expert professional, attendants are relied upon to have embraced a program of training to a standard set by the UKCC of in any event first degree level and exhibit accomplishment in the territories of clinical practice, administration, practice development and care and program administration.

Suitable training for the OPSN necessitates:

- Sufficient and sound clinical experience working with older people;
- Post-registration development in the distinctive and 'exceptional' aspects of older people's health and social circumstances and necessities;
- Post-registration advancement in comprehension the particular issues of later life e.g. the social gerontological literature, the scope of living circumstances and individual and interpersonal organizations; and
- Attributes and skills which empower the nurse to react expertly to the needs of elderly individuals.

It is foreseen that, as an after effect of studying for this degree, the OPSN will have the capacity to give, advance and create talented comprehensive consideration to older people in a variety of situations. The NSF has proposed service models with standards for falls, stroke, and Intermediate care. Now and again care pathways will encourage their usage. The scope of aptitudes required by the workforce to convey this way to care does not exist in a specific profession or part of the service. Those customarily found in hospital based departments (i.e. specialist departments) will progressively be required in the community. Working in an interdisciplinary manner presents difficulties to all.

A key service development central both to the NHS Plan and the NSF is the single process of assessment, took place in 2002 for vulnerable older adults. The extent of this generic assessment procedure was depicted in the NSF. It is imagined that nurses medical, social laborers, and advisors will be prepared to play out these assessments, which may then connect into fundamental service provision or to further expert evaluations and specialists services. For the client, the single evaluation procedure can be seen as a key part of entire frameworks working. At present the workforce is deficient, most likely in number and surely in abilities, to convey this goal. The OPSN could be a key asset to give leadership for nursing and add to cross limit working.

The OPSN functioning as a component of an expert group with geriatricians, therapists, social specialists and others over all settings, would share a dream and responsibility for the thorough conveyance of services as well as developing good practice in nursing older people.

Specialist nurses can work in a variety of settings and across boundaries. They can work with nursing home staff, acute care, hospital, home care, hospital or primary care. Each OPSN would work with a specific community of older people i.e. they will know the ageing population in their locality. Their role will develop with the requirements and circumstances of every area or territory and certain territories and obligations are liable to shift from post to post and inside the same post after some time, keeping in mind the end goal to mirror the changing needs of older people in each locality.

Registered Nurses

Likewise with different professions, nurses by and large get practically no preparation in the rules that underlie geriatric nursing in their fundamental nursing instruction. In the States 31 percent of new RNs got baccalaureate degrees, yet only third of the baccalaureate programs required a course centered around geriatrics. All baccalaureate programs incorporate some geriatric materials, yet the degree of this content is obscure (9). While 42 percent of RNs get their underlying instruction through associate degree nursing programs (10), the level of reconciliation of geriatrics into these programs is additionally obscure.

Given the lack of geriatric content in training programs, it is suitable to accept that most practicing RNs have minimal formal readiness in geriatrics.

There exist various endeavors aimed at guaranteeing nursing competency in geriatric care. In 2000, for instance, the American Association of Colleges of Nursing (AACN) created rules for geriatric competencies in baccalaureate programs. The National Council of State Boards of Nursing (NCSBN) mapped those rules against the National Council Licensure Examination (NCLEX), which is required for licensure of all attendants, to guarantee sufficient testing on geriatric issues (11). Still, all the more should be done to break down the profundity of this content (12). In the Region there is a need for both different public and private efforts intended at expanding the geriatric content of nursing programs and creating geriatric nursing leaders. Grants should be made available to nursing schools to build the incorporation of geriatrics into their core curricula.

Advanced Practice Registered Nurses

In the States a RN may turn into an APRN by getting a graduate degree and may get to be certified either through a national certifying examination or through state accreditation mechanisms. An APRN capacities as an autonomous health care provider, tending to the full scope of a patient's wellbeing issues and needs inside an area of specialization. There are various diverse sorts of APRNs, including: nurse practitioners (NPs), who provide primary care; clinical nurse specialists, who classically specialize in a medical or surgical specialty; certified nurse anesthetists; and certified nurse mid- wives. The pipeline for creating APRNs with a specialization in geriatrics is deficient. Likewise with different sorts of nurses, the John A. Hartford Foundation has been a key supporter in the improvement of the geriatric APRN workforce. Specifically, the Building Academic Geriatric Nursing Capacity Scholars and Fellows Awards Program targets doctoral and post-doctoral nurses, and APRNs who need to divert their professions toward geriatrics (13).

NPs represent an especially imperative part of the workforce tending for older adults as a result of their capacity to give essential care, and in addition watch over patients preceding, amid, and after an acute hospitalization furthermore to provide care to occupants in institutional long term care settings. NPs treat a lopsided number of more older adults-23 percent of office visits and 47 percent of hospital outpatient visits with NPs are made by individuals 65 and more (14). Besides, NPs watch over a higher extent of elderly poor adults than do doctors or doctor collaborators (15). At last, NPs have been appeared to give top notch high quality care and be cost-effective (16-18).

While APRNs watch over extensive numbers of older adults in ambulatory care, hospitals, and institutional long-term care settings, APRN education programs are deficient in specific geriatric requirements. The AACN issues a set of competencies called Nurse Practitioner and Clinical Nurse Specialist Competencies for Older Adult Care (19,20), however it doesn't require that these abilities be consolidated into educational programs. Some of these skills include:

- Ability to differentiate between sickness and normal aging;
- Assessment of geriatric disorders;
- Documentation of changes in mental status;
- Education of patients and their families about prevention, and end-of-life consideration;
- Assessment of social and other worldly concerns; and
- Collaboration with other health care professionals.

Licensed Practical Nurses

In a number of countries in the Region there is a different route toward practicing nursing including various terminology for practical nurses. These usually follow technical vocational programs leading to various degrees. These programs vary from one to three years. In Lebanon they go from BT to TS to LT. LPNs have a more limited scope of practice than RNs, but this scope can vary widely among countries, especially in light of the nursing shortage.

In the States 26 percent of all LPNs working in nursing homes; LPNs are particularly vital to the care of older adults in long term care settings (21). LPNs regularly give more hours of care per nursing home occupant every day than do RNs (22). LPNs get around 1 year of preparing through specialized or professional schools or through junior or community colleges. With experience and preparation, LPNs may direct nurse aides.

Regional Situation

In the area there is a present and approaching nursing deficiency that has gotten much consideration. Gerontology training in nursing programs was noted in ten Arab countries (Bahrain, Jordan, Lebanon, Tunisia Libya, Morocco, Oman, Palestine, Qatar and Syrian Arab Republic). Also, men remain under-represented in the nursing calling and should be considered for enrollment endeavors to alleviate workforce deficiencies.

The keys to enable the nursing profession to effectively cope with the challenge of caring for the elderly lie in specialized training that equips nurses with the knowledge needed. The concept of nurse practitioner is not acceptable in the area, although nurse practitioners are increasingly popular in the USA. There is a need to incorporate gerontological nursing preparation into basic nursing education (23). The teaching of a Nursing Home Program is of vital importance. It will help nursing homes gain access to the research and educational resources of universities with student access to actual clinical nursing situations in real life. An attempt to create a close relationship between facilities and private institutes providing health care services to the elderly and institutions responsible for education and research should be made.

Recommendations

There is a need to encourage nurse competence in aging through initiatives in the Region. In doing so the quality of health care of the elderly will improve. These initiatives may include :

- Enhancing Geriatric Activities of National Specialty Nursing Associations
- Promoting the creation of Gerontological Nursing Certification to encourage specialty nurses to obtain dual certification and validate their geriatric competence along with their specialty expertise.
- Providing a Web-based Comprehensive Geriatric Nursing Resource Center
- Encourage regional collaboration in the area

Conclusion

Nursing must focus upon the entire spectrum of health and develop interventions geared, not only toward the individual patient, but also toward the family and community. It is a prime responsibility of nursing to encourage elderly people to optimize their physical, social, and psychological function during changes in their state of health.

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THE EFFECT OF AEROBIC EXERCISE ON THE FATIGUE LEVEL AMONG ADULT CANCER PATIENTS POST BONE MARROW TRANSPLANT (EVIDENCE BASE PAPER)

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Abstract

Purpose: **The purposes of this evidence base paper are to find the best evidence related to using aerobic exercise to manage post bone marrow transplant fatigue, also to answer the PICO question which has been addressed in this study.**

Methods: **An electronic literature search has been conducted using data bases like CINAHL, Pubmed, and Ovid nursing to find the relevant articles according to specific inclusion criteria; the search process yielded finally twelve articles.**

Results: **This paper found moderate to strong evidence for using aerobic exercise to manage post bone marrow transplant fatigue.**

Implications and recommendations: **Aerobic exercise can be carried out safely, and directly post bone marrow transplant; also adhering to a specific programmed aerobic exercise with the treatment plan will decrease the fatigue level post transplant.**

Key words: **Bone marrow transplant, fatigue, exercise.**

1. Introduction and Background

Fatigue is a multidimensional concept with several modes of expression: physical, emotional and cognitive. Fatigue is associated with the inactivity presentation or lack of motivation (Smets, Garssen, Schuster & Haes, 1993). Fatigue is an exceedingly common often treatable problem in cancer patients that profoundly affects all aspects of quality of life. Patients report fatigue as one of the most important and distressing symptoms related to cancer, also it's one of the most common side effects of chemotherapy (Campos, Hassan, Riechelmann & Giglio, 2011). Insufficient coping with the experience of cancer, fear of disease recurrence, dysfunctional cognition concerning fatigue, dysregulation of sleep and dysregulation of activity are all factors that play a role in fatigue severity. (Gielissen et al., 2007).

Impairment of physical performance and fatigue are common and sometimes serious side effects of cancer treatment. It has been estimated that the problem affects up to 70% of cancer patients during chemotherapy or radiotherapy. One frequently underestimated factor contributing to loss of physical performance in cancer patients is the lack of muscular activity during in-hospital treatment (Lange, Mertelsmann & Keul, 2007).

Bone Marrow Transplant (BMT) can be an extraordinary, life-saving treatment. It has now become the standard treatment for a number of neoplastic and immunological disorders. Post BMT fatigue is common among patients and it has an effect on their quality of life (Appelbaum, 2007). 35% of the BMT patients experienced severe fatigue. The percentage of patients with severe fatigue remained stable during the years after transplantation. Several psychosocial factors, but not medical factors, were associated with fatigue, also with no decrease in fatigue complaints during the first years after Stem Cell Transplant (Gielissen et al., 2007).

The purposes of this evidence base paper are to find the effect of exercise especially aerobic exercise on the fatigue level among adult cancer patients post bone marrow transplant, and to answer the PICO question which represent the following: Population and problem (P): fatigue post bone marrow transplant. Intervention (I): Aerobic exercise.

Comparison (C): Patient daily activities/ other types of exercise with aerobic exercise intervention. **Outcome (O):** Management of fatigue level among post bone marrow transplant patients

2. Methods

An extensive electronic search was conducted to look for articles related to post BMT fatigue management by programmed exercise especially aerobic exercise using data bases and journals. The data bases used were: CINAHL, COCHRANE, Nursing Ovid, and Pubmed. The key words used to find the articles were: exercise, high dose chemotherapy, hematopoietic stem cell transplant, fatigue post BMT, and fatigue induced by chemotherapy, and their alternatives, also a combination of some of these words has been used to find more relevant articles.

The search process yielded many articles but not all of them relevant to the phenomenon of interest, so the articles were reduced to twelve articles after exclusion of duplicated studies, reviewing the titles of some of them, the abstract of others, and the full text for others.

Articles were considered relevant if:

1- They contained information about cancer related fatigue, exercise among cancer patients, exercise for BMT patients, BMT complications, post BMT fatigue, high dose chemotherapy complications management, and the usage of aerobic exercise.

2- Were written in English language.

3- Were quantitative research classified between level I to IV according to a specific leveling system (see appendix).

4- Any type of transplant (Allogenic, Autologous) for malignant disorder.

5- Adult age group (more than 18 years to 65 years).

Although the time frame for the relevant articles should be as the maximum five years, but some articles were used before 2009 to reach the term of data saturation, as there were little current studies related to the topic and that met the inclusion criteria.

2.1 Study Characteristics

After applying the inclusion criteria on retrieved studies, twelve articles were included in this review. The sample size of these studies ranged from 10 to 293. The studies' classification depended on its design strength as levels according to the leveling system as shown at table (1) in the appendix. The time frame of retrieved articles was between 1997 to 2013. The studies were of mixed types of transplant except one contained only Allogeneic HSCT (Mello, Tanaka & Dully, 2003), also all the studies participants were adult cancer patients. Most of the articles contained different types of exercise like aerobic, strength, and endurance exercise, also some of them were supervised, and others were home based exercises. Table 2 shows more details about the reviewed articles.

3. Findings and Discussion

3.1. Findings From Level I:

All meta- analysis, and systematic literature review is considered as level one; the research process yielded 2 meta analysis and systematic reviews and the evidence was: The newly updated Cochrane Review includes 56 studies, involving a total of 4068 people undergoing cancer treatment. The findings indicate that those with solid tumors benefited from aerobic exercise, such as walking or cycling, both during and after cancer treatment. Other forms of exercise, however, including resistance training, did not significantly reduce fatigue. The evidence suggests that exercise may help reduce cancer-related fatigue and should therefore be considered as one component of a strategy for managing fatigue that may include a range of other interventions and education. Also the review suggested further research is needed to understand how the frequency and duration of exercise, as well as the type of cancer, affects the results, as twenty-eight of the studies were carried out in breast cancer patients (Cramp & Byron, 2012).

Another meta analysis conducted by Brown and his colleagues in 2011 the purpose of which was to evaluate the effect of types of exercise in cancer related fatigue indicated that the resistance exercise interventions of moderate intensity were more effective than low intensity or aerobic exercise.

Author comments: From the previous findings aerobic exercise can be used as a way to decrease cancer and its related treatment fatigue, and it is considered strong evidence to use exercise in general to decrease fatigue level, but the other systematic analysis contradicts the first review and provides other evidence to use other types of exercise which is resistance exercise to decrease fatigue level. But this review has some limitations like the included studies had small sample size, and its results can't be generalized.

3.2. Level II Evidence Findings:

A well designed randomized experimental studies included in the level II evidence according to evidence levels, was the first randomized experimental study conducted in 2011 that demonstrates that there is a potential positive effect of strength training on physical activity, fatigue, and quality of life in people receiving high-dose chemotherapy and HSCT compared with usual activity (Hacker et al., 2011).

The aim of another randomized clinical trial done in 2011 by Villanueva and his colleague was to evaluate the effectiveness of an 8 week multimodal physical therapy program on cancer related fatigue, and the final finding was that the 8 week multimodal exercise has an effect in decreasing cancer related fatigue.

Another randomized experimental trial's purpose was to evaluate the effects of a 12-week outpatient physical exercise program, incorporating aerobic and strength exercises, as compared with a usual care control condition on patients' physical performance and psychosocial well-being, and its final result indicated that the programmed exercise should be considered in the management of HSCT recipients to improve physical performance after discharge from the hospital (Knols et al, 2011). Also the purpose of another one conducted by Jarden and his colleagues in 2009 was to investigate the effect of a 4- to 6-week multimodal program of exercise, relaxation and psycho-education on physical capacity, functional performance and quality of life (QOL) in allogeneic hematopoietic cell transplantation adult recipients, and its final result give evidence of assignment of a multimodal intervention during Allo-HSC T did not cause untoward events, sustained aerobic capacity and muscle strength and reduced loss of functional performance during hospitalization. Also the exercise programs can be carried out safely after HST, as the study investigated the effect of more than one type of exercise such as aerobic exercise 15-30 minutes of cycling five times a week, resistance exercise 15-20 minutes 3 times a week, and dynamic stretch exercise five times a week. 15-20 min. exercises included neck movements, shoulder rotations, hip flexion/extension, standing calf raise, ankle dorsiflexion and plantar flexion and progressive relaxation twice a week, for 20 minutes.

Baumann and his colleauges conducted a randomized controlled trial in 2010 and its purpose was to evaluate the different effects of specific, moderate physical activities on the physical and psychological condition of HSCT patients, and its final result indicated there was a significant difference in the intervention group in regard of strength, endurance, lung function and quality of life. This article providing a technique and duration of aerobic exercise to be carried out by patient pre, during, and post HSCT, as the following: Aerobic exercise: During aplasia twice a day and during chemotherapy and after engraftment once a day 10-20 min cycling at a bicycle ergometer, 80% of the achieved watt load during the modified WHO-test for fatigue.

In 2006 a randomized controlled trial done by Carlson and his colleges, and consist of 12 participants indicated very large improvements in fatigue level over the course of an individualized aerobic exercise program in post-HSCT patients who were suffering from high levels of fatigue for which no morphological, biochemical, hormonal or psychological correlate could be identified.

A final level II evidence trial was conducted in 1997 by Diemo and his colleagues and the title of their study was "Effects of Aerobic Exercise on the Physical Performance and Incidence of Treatment-Related Complications After High-Dose Chemotherapy", and the result indicated the fatigue level among patients post high dose of chemotherapy decreased significantly after an aerobic exercise program, even though the study was conducted in 1997 its result provided a significant improvement in fatigue level, also the safety of aerobic exercise program among patients.

3.3 Level III Evidence:

Evidence obtained from well designed non-randomized controlled trials OR from well designed cohort or case-control analytical studies, preferably multicenter or conducted at different times. There was no study found according to this level of criteria.

3.4. Level IV Evidence:

The retrieved evidence included two descriptive studies and one prospective study, and the results were as following : In 2012 Tonosaki conducted a descriptive study the purpose of which was to analyze the effects of leg muscle strength and fatigue on step-count as a measure of physical activity for people staying at home after hematopoietic stem cell transplantation (HSCT) and the results indicated the effect of HST on physical activity as Mean step-count at home was most strongly affected by ankle plantar flexion strength/kg, and increasing ankle plantar flexion strength/kg was shown to promote recovery of normal physical activities. Another descriptive study showed the importance of exercise to reduce cancer related fatigue, but the specific exercise type wasn't mentioned, and physiotherapists' management of cancer related fatigue includes recommending and using exercise and teaching energy conservation techniques. Another recommendation can be concluded from this study when comparing the strength exercise with the aerobic exercise; the aerobic exercise is easier than strength exercise. That means the aerobic exercise should be feasible more than strength, and we can conclude that the aerobic exercise program is feasible among patients post HSCT (Donnelly et al, 2009). Also another literature review emphasised these recommendations by suggestion as there is significant benefits from the exercise interventions reported for physical performance, quality of life and fatigue status of the patient, like faster recurrence of immune cells or reduced severity of therapy-related side effects can be estimated. Also ithas been proposed that exercise be used as a non-pharmacologic adjuvant therapy to combat the physiological and psychological symptoms of HCST (Wiskemann & Huber, 2008).

The last evidence was a prospective study conducted in 2011 by Hackers and his colleagues that indicated the strength-training intervention refined from an unsupervised, home-based program to a combination supervised and unsupervised program with weekly clinic

visits, were very acceptable, although some started out at a very low intensity.

Summary and Conclusion

The previous evidence of the literature review aimed to find the effect of exercise in general and aerobic exercise, especially on the fatigue induced by cancer treatment among adult cancer patients post bone marrow transplant.

The analyzed literature provided a moderate to strong evidence of using aerobic exercise to decrease the post bone marrow transplant fatigue, and also recommended to adhere to aerobic exercise such as walking, or bicycling as part of the treatment plan.

The previous findings are compatible with the recent guidelines for exercise prescription for cancer survivors from the American College of Sports Medicine (2010) which report no contraindication for starting an exercise program in patients undergoing either autologous or allogeneic HSCT however, issues regarding the ideal time for starting a program safely and effectively, type of program, frequency, intensity and duration is not confirmed, especially in relation to the HSCT treatment trajectory. Also it is proved that aerobic exercise for adults post HSCT can be practiced safely and it has a lot of benefits like improvement of physical fitness, muscular strength, flexibility, bone health, sleep, depression, anxiety, and quality of life. The specific period of training was 75 minutes weekly for vigorous exercise, and 150 minutes for moderate intensity aerobic exercise.

Finally many types of exercise can be practiced by cancer patients like aerobic, strength, and endurance exercise, but most of the literature regarded using aerobic exercise to reduce cancer related fatigue especially among bone marrow transplant patients.

Still there is debate on the specific details about aerobic exercise like duration and weekly frequency, but the conclusion about this debate may be as the current recommendation as the patients should be exercised three to five times weekly with moderate aerobic exercise intensity, the type of aerobic exercise may be walking on a treadmill, or ergo-motor bicycling. Also another recommendation is to adherence to aerobic exercise with treatment conditioning is an advantage to control fatigue post HSCT. Aerobic exercise can be carried out safely, and immediate post bone marrow transplant, 3-5 times weekly, such as walking or bicycling on an ergometer bicycle.

Appendices

Table 1: Levels of Evidence Ratings

Level 1	Evidence obtained from systematic review of relevant randomized controlled trials (with meta-analysis where possible).
Level 2	Evidence obtained from one or more well designed randomized controlled trials.
Level 3	Evidence obtained from well designed non-randomized controlled trials OR from well designed cohort or case-control analytical studies, preferably multicenter or conducted at different times.
Level 4	The opinions of respected authorities based on clinical experience, descriptive studies or reports of expert committees.

Articles Summary Table

Title & Author	Year	Design & Purpose	Sample Size	Results
Exercise for the management of cancer-related fatigue in adults (Cramp & Byron)	2012	Systematic meta analysis-Cochrane review Evaluate the effect of exercise on cancer-related fatigue both during and after cancer treatment	56 studies	Aerobic exercise can be regarded as beneficial for individuals with cancer-related fatigue during and post-cancer therapy, specifically those with solid tumours. Further research is required to determine the optimal type, intensity and timing of an exercise intervention.

Title & Author	Year	Design & Purpose	Sample Size	Results
Efficacy of Exercise Interventions in Modulating Cancer-Related Fatigue among Adult Cancer Survivors: A Meta-Analysis. Brown et al,	2011	Meta analysis. The purpose of this meta-analysis was to explore the efficacy of exercise as a non-pharmacologic intervention to reduce cancer-related fatigue (CRF) among adult cancer survivors.	44 studies	Exercise reduced cancer related fatigue especially in programs that involved moderate-intensity, resistance exercise among older cancer survivors.
Strength Training Following Hematopoietic Stem Cell Transplantation Hacker E et al	2012	Randomized experimental study. To test the effects of strength training compared with usual activity on physical activity, muscle strength, fatigue, health status perceptions, and quality of life following HSCT.	19 patients	Study demonstrates the potential positive effects of strength training on physical activity, fatigue, and quality of life in people receiving high-dose chemotherapy and HSCT. Comment: Another type of exercise which is the strength exercise can reduce the fatigue effect post HSCT.
A multimodal exercise program and multimedia support reduce cancer-related fatigue in breast cancer survivors: A randomized controlled clinical trial. (Villanueva et al, 2011)	2011	Randomized clinical trial To evaluate the effectiveness of an 8 week multimodal physical therapy program on cancer related fatigue		8 week multimodal exercise has an effect in decreasing cancer related fatigue
Effects of an outpatient physical exercise program on hematopoietic stem-cell transplantation recipients: a randomized clinical trial (Knols et al, 2011)	2011	to evaluate the effects of a 12-week outpatient physical exercise program, incorporating aerobic and strength exercises,as compared with a usual care control condition on patients' physical performance and psychosocial well-being.		Programmed exercise should be considered in the management of HSCT recipients to improve physical performance after discharge from the hospital.

Title & Author	Year	Design & Purpose	Sample Size	Results
A randomized trial on the effect of a multimodal intervention on physical capacity, functional performance and quality of life in adult patients undergoing allogeneic SCT Jarden M et al.,	2009	Randomized controlled trial To investigate the effect of a 4- to 6-week multimodal program of exercise, relaxation and psycho-education on physical capacity, functional performance and quality of life (QOL) in allogeneic hematopoietic cell transplantation adult recipients.	42	Assignment of a multimodal intervention during Allo-HSC T did not cause untoward events, sustained aerobic capacity and muscle strength and reduced loss of functional performance during hospitalization. **Comment:** The exercise programs can be carried out safely after HST, as the study investigated the effect of more than one type of exercise such as aerobic exercise 15-30 minutes of cycling five times a week, resistance exercise 15-20 minutes 3 times a week, and dynamic stretch exercise: Five times a week, 15–20 min. Exercises included neck movements, shoulder rotations, hip flexion/ extension, standing calf raise, ankle dorsiflexion and plantar flexion Progressive relaxation: Twice a week, 20 min. Patients alternated between muscle tensing (5 s) and muscle relaxation (30 s) for each muscle group
A controlled randomized study examining the effects of exercise therapy on patients undergoing haematopoietic stem cell transplantation Baumann, F., Kraut, L., Schul, K., Bloch, W., & Fauser, A	2010	Controlled randomized study. To evaluate the different effects of specific, moderate physical activities on the physical and psychological condition of HSCT patients	64	Significant differences in the intervention group regarding strength, endurance, lung function and quality of life. Comment: This article provides a technique and duration of aerobic exercise to be carried out by patient pre, during, and post HSCT, as the following: Aerobic exercise: During aplasia twice a day and during chemotherapy and after engraftment once a day 10–20 min cycling at a bicycle ergometer, 80% of the achieved watt load during the modified WHO-test for fatigue.
Individualized exercise program for the treatment of severe fatigue in patients after allogeneic hematopoietic stem-cell transplant: a pilot study Carlson LE, Smith D, Russell J, Fibich C & Whittaker T	2006	Randomized experimental study. This pilot study investigated whether patients with no clinical or psychological abnormalities but severe fatigue would respond to an individually adapted aerobic exercise program.	12 patients	The study found very large improvements in fatigue over the course of an individualized aerobic exercise program in post-HSCT patients who were suffering from high levels of fatigue for which no morphological, biochemical, hormonal or psychological correlate could be identified. Comments: As this a pilot study and has a small sample side, its result can't be generalized, but may give us a hint for the importance of aerobic exercise program.
Effects of Aerobic Exercise on the Physical Performance and Incidence of Treatment-Related Complications After High-Dose Chemotherapy Dimeo F., Fetscher S., Lange W., Mertelsmann R., & Keul J.	1997	Randomized experimental study. To investigate if the impairment of physical performance post BMT can be partially prevented.	33 patients	Aerobic exercise can be safely carried out immediately after high-dose chemotherapy and can partially prevent loss of physical performance. Comment: Event the study conducted in 1997, but its result is significant as the fatigue level among patients decreased significantly after aerobic exercise program.

Title & Author	Year	Design & Purpose	Sample Size	Results
Experience of severe fatigue in long-term survivors of stem cell transplant. Gielissen M et al.,	2007	Descriptive study To investigate the prevalence of fatigue after completion of stem cell transplantation.	98 patients	35% of the patients experienced severe fatigue. The percentage of patients with severe fatigue remained stable during the years after transplantation. Several psychosocial factors, but no medical factors, were associated with fatigue, no decrease in fatigue complaints during the first years after SCT. Comment: This article gave us the significance of the initiated study, as the fatigue is a very important complaint among cancer patients post HST.
The long-term effects after hematopoietic stem cell transplant on leg muscle strength, physical inactivity and fatigue Tonosaki A	2012	Descriptive longitudinal. To analyze the effects of leg muscle strength and fatigue on step-count as a measure of physical activity for people staying at home after hematopoietic stem cell transplantation (HSCT).	19	Mean step-count at home was most strongly affected by ankle plantar flexion strength/kg, and increasing ankle plantar flexion strength/kg was shown to promote recovery of normal physical activities. Comment: The effect of HST on physical activity had been shown in this study.
Physiotherapy management of cancer-related fatigue: A survey of UK current practice. Donnelly, C., Lowe-Strong, A., Rankin, J.,Campbell, A., Allen, J., & Gracey J.	2009	Descriptive Study. To establish physiotherapy management of cancer-related fatigue (CRF), in particular, to determine physiotherapy exercise management of CRF.	223	Physiotherapists' management of CRF includes recommending and using exercise and teaching energy conservation techniques. Comment: Another general importance of exercise to reduce cancer related fatigue revealed in this study, but the specific exercise type wasn't mentioned.
Exercise in patients receiving hematopoietic stem cell transplantation: lessons learned and results from a feasibility study Hacker, E., Larson, J., & Peace, D	2011	Prospective study To test the feasibility and acceptability of a strength-training intervention in patients receiving hematopoietic stem cell transplantation (HSCT).	10	The strength-training intervention refined from an unsupervised, home-based program to a combination supervised and unsupervised program with weekly clinic visits, and the patients reported that the exercises were very acceptable, although some started out at a very low intensity. Comment: When comparing the strength exercise with the aerobic exercise, the aerobic exercise is easier than strength exercise, that means the aerobic exercise should be feasible more than strength, and we can conclude that the aerobic exercise program is feasible among patients post HSCT.
Physical exercise as adjuvant therapy for patients undergoing hematopoietic stem cell transplantation. Wiskemann J & Huber G	2008	Literature Review	15 Study	Significant benefits from the exercise interventions have been predominantly reported for physical performance, quality of life and fatigue status of the patients. Several other benefits like a faster recurrence of immune cells or reduced severity of therapy-related side effects can be estimated. **Comment:** This study's results revealed the importance of exercise post BMT, and there is no significant decrease in physical capacity at the point of hospital discharge or during the inpatient period.

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LITERATURE REVIEW: APPLICATION OF PSYCHO-EDUCATION FOR FAMILIES THAT HAVE SCHIZOPHRENIA PATIENTS

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Abstract

Psycho education is defined as systematic, structured, instructional information on the disorder and its treatment, which includes combined aspects of emotional education in order to enable the participants of patients as well as family members to cope with the illness.

Family psycho education refers to a wide range of programs that provide education, support, and guidance to families about coping with mental illness, especially to family members of those with mental illness such as schizophrenia that is considered a severe, chronic brain disorder where it becomes difficult for persons to understand the difference between real and unreal situations, to think logically, to have appropriate emotional responses, and to behave appropriately at home or in social situations. Not only patients with schizophrenia suffer greatly from this illness, but also their family members. This literature review shows that Implementing psycho education programs to families of patients with schizophrenia who often play a vital role as caregivers, promotes recovery, and maintains mental health care services, also applying family psycho-education programs on those in the mental health care setting affects the mental care outcome in many dimensions.

Key words: **psycho-education, psychiatric, family psycho-education program, schizophrenia.**

Introduction

Psycho education is defined as systematic, structured, instructional information on the disorder and its treatment, which includes combined aspects of emotion education in order to enable the participating patients as well as family members to cope with the illness (Christine, Gabriele, Walz, & Werner, 2006). Psycho-education programs are considered as evidence-based practice that has been shown to alleviate relapse rates and facilitate recovery of patients who have mental illness (Dixon et al., 2001).

The existence of family members around the patients with schizophrenia and those with other serious mental illnesses often play a vital role as caregivers; in order to assist those with schizophrenia disorder which is considered the most common disease in psychiatric clinics, and it is also a severe mental disorder with relatively poor prognosis compared with other mental disorders (Song et al., 2014). New trends point towards community-based care for patients with schizophrenia where family members can assist in health care and in management of these patients, and a system of evidence-based practices have arisen to meet family member's necessity for education, support and guidance (De Sousa et al., 2012). Different types of implantations referred to as "family psycho-education" programs, have been developed, progressed, and practiced around the world as schizophrenia rehabilitation programs (De Sousa et al., 2012)

Schizophrenia is a severe, chronic brain disorder that becomes difficulty for people, to understand the difference between real and unreal situations, to think logically, to have appropriate emotional responses, and to behave appropriately at home or in social situations. Not only patients with schizophrenia suffer greatly from this illness, but also their family members (The world health organization [WHO], 2013). From this need Family psycho education was originated and has been shown to be an effective intervention for patients who suffer

from schizophrenia and their family members. Studies taken up by this author have shown the effectiveness of family interventions, and demonstrated it with community based-care psycho education (Song et al., 2014)

As mentioned in Smith et al 2010 who defined psycho education as any intervention that educates patients and their families about their illness with a view to improving their long-term outcome. In despite of this Smith et al., (2010) consider the main principal of psycho-education for schizophrenia disorder is to provide accurate and reliable information related to the disorder and make the family able to make decisions regarding the patient and their life as family.

What is Family Psycho education?

Family psycho education refers to a wide range of programs that provide education, support, and guidance to families about coping style with mental illness, through education that can provide information about the nature of mental illness and its treatment; family are taught to be more effective in problem solving and communication skills to cope with the challenges and prognoses of mental illness (Murray-Swank et al., 2012)

One of the main sets of characteristics that makes family psycho-education programs effective, includes the items of emotional support, education, resources during periods of crisis, and problem-solving skills. But the use of family psycho-education in routine practice has been limited because of barriers at the level of the patients and his or her family members, the clinician and the administrator, and the mental health authority that reflect the existence of behavior, knowledge-based, practical, coping methods to deal with problems and systematic implementation (Dixon et al., 2001).

Murray-swank et al., (2012) describe, the family psycho education approach is that the family should recognize that mental illness is a brain disorder and that families play a significant role in patient recovery, and rehabilitation. That supposes the main principle of family psycho education is the best possible outcomes for patients can be achieved through collaboration among professionals, health care team, consumers, and families. Also as mentioned before psycho education is considered as evidence-based practice that has been shown to alleviate relapse rates and facilitate recovery of patients (Dixon et al., 2001). Kluge, (2006) judge that family psycho education as well has become a strongly supported evidence-based practice in management of schizophrenia, through research and studies in this field that have been able to detect that psycho education in families of patients with schizophrenia can reduce the relapse rates of these patients, and positively affect the course of the patient's illness, and help the families to assist patients to better cope with the mental illness (Kluge, 2006).

When discussing the essential elements of family psycho-education include having different family psycho education programs that vary according to their content; almost all contain an educational component and a supportive or skill, and development component. The educational component typically provides information on the different types of mental disorder and the associated symptoms, the different treatments of mental disorder, comprehensive information on medications, community resources and public benefits, while the supportive or skill development component includes, problem-solving skills to assist families to better manage their associated symptoms, communication skills, strategies to reduce caregiver stress, and finally family members are encouraged to learn from one another's experience and expand their social network (Murray-Swank et al., 2012)

The family psycho-education programs have several evidence-based models that have been developed to address the needs of families of persons with mental illness behavioral family management, individual family psycho-education, multi-family groups, and family to Family (Murray-Swank et al., 2012); in detailing particular items of behavioral family management. This terms mean an individual family education approach is done in the family member's home, Sessions of the program focus on education about schizophrenia disorder, strategies for improved communication, and the development of new problem-solving strategies (Murray-Swank, et al; 2012). However, this model focuses on a strengths based approach, building on the family's strengths to assist the patients to recovery and rehabilitation (Murray-Swank et al., 2012). The Individual and family psycho education approach contains more engagement effort with the family and patient, as well as expanded education about mental illness and its treatment, and guidelines for recovery (Kluge, 2006). In this program the family receives education and support both in a group setting and in individual in-home sessions; this approach is fior working long-term with the family to ensure the patient's recovery (Murray-Swank et al., 2012). Multifamily groups: this approach focuses on behavioral family management and individual family psycho education. Firstly each family is met with individually after that multifamily group meetings are held which several members of the same family attend, and emphasizes to families to learn from one another, connecting families to one another, and building feelings of hope about the future (Murray-Swank et al., 2012)

During the writing this paper and searches of researches published in CINAHL Database, EMBASE, PsycINFO and ISI Web of Science, Pub Med Database, Medline, EBSCO, and Science Direct Databases, unfortunately I could not find accurate prevalence about family psycho education programs with schizophrenia patients.

The aim of this literature review is to clarify the family psycho education programs related to schizophrenia patients and to scope significant processes in effective family psycho education programs.

The Literature Review

Implementing the family psycho education programs of patients with schizophrenia often plays a vital role as caregivers promote recovery, and maintain mental health care services (Kluge, 2006). Additionally, through applying family psycho-education programs in the mental health care setting affects the mental care outcome in many dimensions (Kluge, 2006). In particular, family psycho education programs include reduced relapse rates and facilitate recovery of patients who have mental illness through providing emotional support, education, and problem-solving skills (Murray-Swank,et al., 2012), However, as Yoshio-Mino (2007), mentions family psycho education has been shown to prevent the relapse of schizophrenia, and to increase compliance to medication and effectiveness in coping with stressors which have been successful in reducing the risk of relapse in the first year following hospital discharge (Desousa-Foundation et al., 2012).

Jan Prasko et al., 2011 reports that schizophrenia disorder is a chronic psychiatric illness affecting 1% to 2% of the population. Schizophrenia patients commonky to relapse and require re-hospitalization The core intervention in schizophrenia remains only anti-psychotic medication; but use of family psycho educational program detects significant improvement in the schizophrenia patients post-hospital discharge with demonstrated effects on rehospitalization rates, and compliance with medication, and knowledge.

In a recent study by Petretto et al., (2013) who used a randomized controlled trial study in collaboration with the Italian National Health Services (NHS); the study composed 340 patients diagnosed with schizophrenia. The study continued for the duration of 6 months but patients were reassessed at 6, 12 and 18 months after the start of family psycho-education program session. The aim of this study was to evaluate effectiveness of the psycho education program in improving adherence to pharmacotherapy and in reducing relapse and readmissions. (Cohen's power =80% medium effect size effect size= 45% at a two-sided significance level of 0.05) The result observed a 25.5% rate of non-adherence to pharmacotherapy, but on opposite side, a 47% rate in adherence to pharmacotherapy, then concluded that the psycho-education program was effective in adherence to pharmacotherapy for patients diagnosed with schizophrenia-spectrum psychoses, improving communication and problem-solving abilities in patients and their families.

Rummel-Kluge et al., (2006) approved through a survey of all psychiatric Institutions in Germany, Austria, and Switzerland that psycho-education can reduce re hospitalization rates and mental health costs in schizophrenia disorder.

A study by J. Ba¨uml et al., (2006) confirmed family psycho educational interventions were accompanied by a higher level of compliance to medication, lower rate of relapse in health status, and improved psycho pathological status, through stress-coping model, with its assumption of a psycho educational interventions applied by an 'obligatory-exercise' program.

As did De Sousa, (2012) in his clinical review show the aim of psycho education programs to provide correct information about the disorder, treatments and long term course and prognosis of the disease, so this program effectively increased medication compliance and effectiveness in coping with stressors that successfully reflected in reducing the risk of relapse in the first year following hospital discharge, through empowering relatives of patients with schizophrenia.

A longitudinal experimental study examined the effect of patient and family education in a sample of Chinese people with schizophrenia, and used a randomized controlled trial in a large hospital with a sample of N=101 patients with schizophrenia and their families; the sample was divided into two groups, the first group was the intervention group which received family psycho education. There was a significant improvement in knowledge about schizophrenia in the experimental group and a significant difference in symptom scores and functioning at 9 months after discharge, but the other group that did not receive family psycho education showed relapse in schizophrenia disorder management (Arthur et al., 2005).

Summary and Conclusion

Family psycho education is programs that provide education, support, and guidance to families about coping styles with mental illness, which at the same time considers evidence-based practice that plays a vital role in reduced relapse rates and facilitates recovery of schizophrenia patients through family psycho education programs in which each process is to be completed through collaboration among professionals, health care team, patients and families. However, most of the studies on family psycho education program that have been investigated the benefits for patients when family members attend a psycho education program are associated with a lower risk for a psychiatric relapse, asmentioned before, and for families who attend a psycho education program it is discovered that these families have a high level of. On the other hand through research evidence it has been detected that family psycho education reduces family burden and increases feelings of empowerment at the same time. Families who attend psycho education programs report high levels of satisfaction with the program and show an increase in skills and knowledge about mental illness and its treatment (Murray-Swank et al., 2012)

Jewell, (2009) describes family psycho-education (FPE) as one from six evidence-based practices approved by the Center for Mental Health Services to patients who are suffering from chronic mental disorder especially

such as schizophrenia disorder and confirm an effective component of family psycho education (FPE) is in reducing symptom relapses and re hospitalizations for patients. The author gives details' about the effectiveness of the (FPE) component as, firstly when family members participate on a consistent basis, which allows them to increase their understanding of definition and the biology aspects of the disorder, secondary, to learn ways to be supportive, and reduce stress in the environment and in their own lives, then develop a broader social network, as well as when these components are used effectively in conjunction wtyh medication, family psycho education (FPE) can help an individual with schizophrenia progress towards the rehabilitation phase and recovery.

Practically family psycho education (FPE) program can be evaluated by the use of two tools that have been developed to monitor the effectiveness of FPE through: The FPE Fidelity Scale; and General Organizational Index, even though it may administer both tools at the same time; The FPE Fidelity Scale which has 14 program-specific items. Each item is rated on a 5-point scale, ranging from 1 (not implemented) to 5 (fully implemented). The items assess whether the program is provided as the evidence-based model prescribed. This scale was developed by a group of researchers at Indiana University-Purdue University, Indianapolis, but The General Organizational Index, developed by Robert Drake and Charlie Rapp, is a newly developed scale. This scale evaluates based on feedback gathered during pilot testing over a long time (Rockville et al, 2009).

Finally; in all previous literature reviews that confirm the effectiveness of family psycho education intervention, should review the factor that maintains optimal efficacy of family psycho education intervention and there should be focus on differences between family members in expressing needs for information, support and skills. In this paper the author confirms the need to deal and organize the needs of family members to adapt with providers to achieve the desired outcome, firstly; Providers can offer family members information about schizophrenia and other mental health system and community resources that they may find helpful, secondly providers can assist family members in learning effective and therapeutic communication with patients in addition to learning problem solving skills to be able to deal with individuals who have mental disorders and never create disruption and fear in phases of rehabilitation for patients; Thirdly, family member need support, to make sure they are building rapport, trust and good relationships with mental health providers and enhance the ability for family member to support each other and be helpful, especially to prevent stigma (Dixon et al., 2000).

Recommendations

After this study on family psycho education the author recommends that when applying family psycho education the program should mention effective steps in family intervention programs as should be the engagement of the family in the treatment process from the beginning and educate the family on "no fault" culture or stigma about schizophrenia disorder; educate the family about variations in prognosis and coping with the patients disorder; should confirm on rapport and therapeutic communication with patients and quality of relationship, and should not restricted patients but encourage them to express their emotions. At the end of this paper the author hopes applying and generalizing this intervention is considered seriously as a method for community-based care for family members who are involved in assistance in health care and in management of patients with schizophrenia.

The limitation in this literature review is that almost all articles that studied family psycho education for schizophrenia patients do not deal with statistics and numbers, for assessingknowledge about the extent of prevalence in family psycho education in schizophrenia patients in their culture and background.

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SOCIAL SUPPORT AND MENTAL HEALTH

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Introduction and Background

When god created humans, human's needs and abilities were identified at the same time Every person has special strength points, characteristics, and qualities. Additionally one of our human needs is social support; at some times every human needs kindness in there relations with others.

In 2013 the WHO defined mental health as a condition of well-being in which all persons realize their own potential, can adapt to daily stressors, can work positively, fruitfully and productively, at the same time this person must be able to make contributions to their community (WHO, 2013).

Mental health focuses on human relationships with others and pays attention to persons who live around this human and focuses on how they can affect this person positively especially when the person is considered a mentally ill patient.

The significance of mental health is focuses on the improvement of quality of life; this improvement results from feeling free from depression, anxiety, addictions and many problems within the psychological dimension. At the same time mental health treatment reduces the medical cost evidenced by medical visits decreased by 90% after psychological treatment, and laboratory costs decreased by 50% At the same time the overall costs decreased by 35% as a whole Moreover mental health support strengthens an individual's ability to make optimal life choices, maintains well-being and physical health and develops healthy relationships (Rhode Island Psychological Associations, 2012).

Regarding social support, the WHO stated that use of social support must be facilitated for people who volunteer thoughts of harming themselves, or people who have plans to harm themselves in the last month or the last year. At the same time social support is defended as a perception and actuality that is someone caring for another, and the care receiver has help available from others. Moreover it is considered as a part of the supportive social network Social support can be formal such as community resources or informal like family support; on this point people must use the available and appropriate resources (WHO, 2014).

Furthermore social support has a large effect on health especially when we are talking about physical dimension including mortality. Individuals who have missed social support are at higher risk for cancer or cardiovascular diseases and other varieties of diseases which lead to death (Unchino, 2009). On the other hand individuals who have higher levels of social support are at low risk for chronic diseases and have increasing likelihood for survival (Holt-Lenstadetal, 2010).

Moreover the women who don't have social support have higher risk for complications during pregnancy compared with women who have social support (Elsenbruch et al., 2007).

Furthermore, many theories talking about social support link it with health, such as stress and coping social support theory that dominates social support research. It has been developed to clarify the buffering hypothesis (Lakey et al., 2011).

Other theories such as relational regulation theory (RRT) focuses on social support in mental health. It is simple and famous theory, at the same time it is focused on the relationship between perceived support and mental health (Lazarus et al., 1984). On the other hand the life-span theory has been developed to focus on the support receiver in the caring process (Uchino et al., 2009).

Furthermore, there are many types of social support provided to the individual according to his/her needs, such as emotional support, tangible support, informational support and companionship support. These types are considered as common functions of support within the social field (Uchino, b. 2004).

Moreover social support may be provided from many sources such as family, organizations, pets, friends, coworkers, and neighbors (Taylor , S. E. 2011). On this point family and friends are considered as natural social

support; on the other hand the organizations and the mental health specialists are considered as formal social support (Hogan, et al 2002). It is important to know that social support has many benefits in mental health, but it does not always affect persons positively.

The goal of this paper is to explain the significance of social support in mental health, describing the major theories of social support in mental health, clarifying social support functions, and discussing the advantages and disadvantages of social support under the mental health umbrella.

Literature Review

Many studies had been conducted about social support in mental health. The purpose of this literature review is to explain the significance of social support in health, clarify different studies about social support theories, describe the functions which are used in social support in different communities, and discuss the advantages and disadvantages of social support among people who are mentally ill and other healthy people.

The current literature review was organized using a systematic method as following; major theories of social support in mental health, function of social support, the advantages and disadvantages of social support, summary, conclusion and finally the recommendations for application in Jordan.

Social support is considered as a life-saver. Studies have shown that people who are supported by strong relationships with friends, family members, work employees, fellow members of church, or different support groups are at less risk of diseases and early death At the same time studies have shown that people with heart diseases or leukemia have higher survival rates when they are socially supported, moreover there is a strong positive relationship between measures of wellbeing and social support. Persons who have social support will have better coping results with stressors than others who don't. These stressors may include rape, job loss, bereavement and diseases (Salovey, 2000).

Sometimes; health care provides must show a friendly relationships with their patients especially within the early phase of interviews to build trusting relationships and to enhance the quality of information during the assessment process in mental health care (Gurung, R.A.R. 2006).

Major Theories of Social Support in Mental Health

Many theories talk about social support and give attention to a strong link between health, social support and other many dimensions. The stress and coping social support theory, dominates social support research. It has been developed to clarify the buffering hypothesis (Lakey, B. Orehek, E. 2011).

The stress and coping social support theory focuses on protection of the person from hazardous health effects of stressful situations; at the same time this theory focuses on events which be stressful insofar as persons have bad thought about certain things and cope ineffectively (Lazarus, R.S, & Folkman, S. 1984).

Moreover there is much evidence related to stress and coping social support theory found in articles which assist stress buffering results to perceive social support (Cohen et al,. 1985).

On the other hand the major problem of the stress and coping social support theory is that stress buffering is unable to seen by social integration, at the same time the better health outcome is not linked by receiving support (Uchino, B. 2009).

Furthermore, the relational regulation theory (RRT) is one of the most famous theories which was developed to clarify the relationship between mental health and perceived support (Lakey, B., Orehek, E. 2011). At the same time the relational regulation theory (RRT) was developed to cover the main effects of stress on mental health, because the stress and coping theory doesn't cover that; this theory was developed to work complementary with the stress and coping social support theory (Lakey; Orehek, E.2011).

As mentioned above RRT was developed to have both a direct effect and buffering on mental health (Lakey., et al 2011), moreover the hypothesis RRT which shows a relationship between mental health and perceived support came from persons who regulate their emotions by ordinary interviews and establishing group activities and sharing experiences rather than single conversations about how they can cope with their stressors (Lakey, B. 2010). This theory is shown as support perceiving evidence by its relational nature (Lakey, B. 2010).

On the other hand the life-span theory works on clarifying the relationship between health and social support. This focuses on differences between person who deliver the support and the person who receives it. Also this theory concludes that the support is a process grown during the life-span and concentrated within the childhood with parent attachment (Uchino, B. 2009).

During the continuing of life-span, the social support grows into adaptive personality traits, for example; low neuroticism, high optimism, low hostility, and social and coping skills (Uchino, B. 2009).

Furthermore using life-span theory as a compensation with many other aspects of personality provides a large and important effect on enhancing and improving the practice and reducing or preventing health related stressors such as divorce or losing a job (Lakey. B. 2010).

The Most Common Function of Social Support

Social support may be classified, categorized and measured by many methods. There are four common functions related to social support provided to the patient as needed. The first one focuses on emotions and needs and is called emotional support. It is characterized by giving others empathy, affection, trust and love; at the same time it is considered as the warmth of any relationship, in addition to nurturance provided to the patient (Taylor, S. E. 2011).

On the same point, when emotional support is provided to the patient, providers let the receiver feel that he/she is valued, thus not missing an important element in the community (Slevin et al. 1996). On the other hand the term of emotional support is also called appraisal support (Wills, T.A. 1991).

The second one of the four common functions of social support is called tangible support. This type of support is categorized by monetary assistance, service providing, and material benefits (Heaney ,C.A, & Israel, B.A. 2008). At the same time tangible support is also called instrumental support. It is considered as a direct method between people to help others (Langferd et al., 1997).

The third function of social support is called informational assistance or informational support. In this type of support persons are given advice from other people, guiding them, and providing suggestions or plans to help others to solve their problems independently or to cope with them positively (Langferd et al., 1997).

The fourth function of social support is called companionship support; this type is categorized by the person developing feelings of social belonging; it is also called belonging support (Wills, T.A. 1991).

This type can be seen in the social activities as collaboration between the seeker of support and the provider of it, such as given tasks in working groups. At the same time these tasks must be appropriate to the seeker's abilities (Unchino, B. 2004).

On the other hand there is a distinction between received and perceived support (Taylor, S.E.2011). The judgment is made subjectively from the recipient's viewpoint. If the provider offers help effectively and at the appropriate time (it is called perceived support), on the other hand enacted support is a special supportive action such as reassurance or advice given by providers at the specific time of needs (Gurung, R.A.R. 2006).

Moreover to measure social support, the terms functional support or structural support must be used(Wills, T.A. 1998).

Furthermore the special function provided by members in a social network is considered as functional support. This function could be emotional, companionship, informational and instrumental as mentioned above (Uchino, B. 2004).

The Advantages of Social Support

The first impression of social support is that it is always positively attached to one person who received it, but after reading many studies the current author concludes that there are many advantages and little disadvantages of social support too.

The advantage of social support may be seen in stressful events, on this point the social support works to reduce anxiety and decrease the depression status among persons who faced stressors (Tylor, S.E. 2011).

At the same time study has shown that social support is effective during conditions of chronic high stress such as cancer (Penninx et al., 1998). At the same time a study made a comparison between people who had social support and other groups who didn't have it and concluded that the group who had social support has less sub-clinical symptoms of anxiety and depression than the group who didn't have social support (Berrara et al., 1986).

On the other hand a study working on major mental disorders showed that the people who have low social support have a higher rate of major mental disorders including post-traumatic stress disorder, panic disorder, social phobia and major depressive disorder than people who have higher social support (Brewin et al., 2000).

On the other hand, a study on schizophrenic patients showrd that people who have low social support have more symptoms than patients with schizophrenia who have better social support (Norman et al., 2005). Another study worked on the relationship between suicidal attempt and social support showed that people with low social support have more suicidal ideation than others who have higher social support (Casey et al., 2006).

Moreover social support could be affecting addicted persons positively and can work on decreasing the rate of alcohol and drugs addiction. (Stice et al., 2009).

On the other hand a study showed that the different types of social support provided may increase psychological stresses; it may be higher than the wishes of supporting receivers, for example if emotional support was sought, informational support must be given (Horowitz et al., 2001).

The Disadvantages of Social Support

Many commentators show that the sharing of social support ironically could lead to harmful effects on relational well-being and autonomy. At the same time there is an encapsulate between dependency and autonomy, moreover social support may lead to harmful outcome results and dependence (Albrecht et al., 1994).

Social support may distract the relationships with others especially when the supportive person didn't understand the support which the consumer needs. (Goldsmith, 1992).

Furthermore social support may have higher cost than the support receiver's financial abilities, especially when support is needed over a long period of time (Albrecht et al. 1994).

Summary and Conclusion

Social support is one of the major issues in the mental health and psychiatric field. It protects human from many physical, mental and psychological problems.

Furthermore social support has a positive effect on survival rate from many diseases; atthe same time social support is recommended to persons who volunteer thoughts or plans of harming themselves. It is considered as a part of social network.

Many theories pay large attention to social support and developing strong relationships between social support and health. The current author's outlines in the paper, stress and coping supportive theory, relational regulation theory and life-span theory.

Moreover this paper discussed the major types of social support such as emotional, tangible, and informational and companionship support; all of these types are considered as common functions of support among social committees.

Finally, social support reflects a large number of advantages on physical, mental, economical dimensions on human life, but on the other hand a little disadvantage related to the effect of social support and people's relationships and cost issues seen after imbalances between needs seeker and provider abilities.

Implication and Recommendations

Social support in Jordanian culture is major issue, especially when knowing that most of Jordanian population are Muslims because Islam focuses on social support behaviors such as grief houses after someone's death. On the other hand some people within the Jordanian community consider social support as a weakness in the seeker self especially when we are talking about tangible support.

Moreover there is an excessive using of social support sometimes in the Jordanian community especially when we are talking about governmental issues. In this major issue persons may get a job or many certifications without any qualification and that results in a poor outcome. Jordanian people name this issue as vitamin O or "Wasta".

On the other hand offering educational programs from the Ministry of Health, Ministry of education and others, about the accurate meaning of social support and how it must be done is a positive step. In this point the Jordanian TV can provide help and play a major role by showing many short movies and role plays on Jordanian screens about the correct social support behavior.

Finally, families of patient who complain from mental or psychological illness are responsible for offering the correct support for those under observation from educated and qualified multi disciplinary team; on this point Jordanian Schools and universities are responsible for developing courses about social support because it is an important.

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CLABSI DURING NEUTROPENIA AMONG ONCOLOGY ADULTS POST CHEMOTHERAPY

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Abstract

Introduction: Central line associated blood stream infection (CLABSI) is a laboratory-confirmed bloodstream infection where central line (CL) was in place for more than 2 calendar days on the date of event, with day of device placement being Day 1. In 2009 it was estimated that about 23,000 CLABSI in the inpatient setting in the United States would increase mortality and morbidity for patients and the health care burden for the institutions as a whole.

Method: To critically examine and explore the body of knowledge regarding CLABSI among the neutropenic patients, a comprehensive literature review was conducted using the electronic databases PUBMED, OVID, Science Direct, and Springer. The following key words were used to search the electronic databases: Neutropenia, CLABSI, oncology patients.

Results: Despite advancements in the treatment and supportive care of patients with cancer, neutropenia remains the major side effect of most anticancer regimens. Infections occur frequently in neutropenic patients and are associated with considerable morbidity and mortality, The most common sites of infection encountered in patients with neutropenia are: Respiratory tract infections occur most often followed by bacteremia. The most common organisms isolated from CLABSI are coagulase negative staphylococci (CoNS), and S. aureus. Other common organisms include Bacillus spp., Corynebacterium spp., Pseudomonas aeruginosa, Enterobacter spp., Acinetobacter spp., and Candida spp.

Conclusion: CLABSI is still a major problem facing health care workers worldwide, especially among cancer neutropenic patients. Methods to decrease incidence, and prophylactic management are promising although good methods are available, the reduction in CLABSI rates will lead to decreased mortality and morbidity among the affected patients, also it will thus decrease the burden among the health institutions treating this type of hospital acquired infection.

Key words: CLABSI, Neutropenia, Oncology patients, post chemotherapy

Introduction

Central line associated blood stream infection (CLABSI): is a laboratory-confirmed bloodstream infection where central line (CL) was in place for more than 2 calendar days on the date of event, with day of device placement being Day 1. (CDC, 2013) In 2009 it was estimated there was about 23,000 CLABSI in the inpatient setting in the United States (MMWR, 2011) which increased mortality and morbidity for patients and the health care burden for the institutions as a whole (MMWR, 2011). In the United States catheter-related bloodstream infections are 1 of the top 4 causes of HAI (hospital acquired infections)(Cardo, et al 2010); around half of the bloodstream infections among the neutropenic patients were reported as catheter related infections The most causative microorganism for bloodstream infection was Escherichia coli (Lima, 2013).

A central line is a long, thin hollow tube that is inserted into a vein in the patient's chest, (CDC, 2013). Colonization of the catheter occurs via two main pathways: the extra luminal route and the intraluminal route. Colonization of short-term CVCs (< 15-20 days) occurs predominantly from the skin puncture site, whereas colonization of long-term CVCs is usually related to intraluminal bacterial spread from a contaminated hub (Mermel, et al 2011). Intravascular devices are available in different types based on their purposes and the anticipated duration of catheterization and can be classified into short-term versus long-term catheters, with the latter requiring surgery for insertion. Mostly the central venous catheters (CVC) are encountered in intensive-care units (ICUs); on the other hand CVCs are increasingly used in non-ICU wards and inpatient floor and outpatient settings like the outpatient clinics (Mermel, et al 2011). A central line is a long, thin hollow tube that is inserted into a vein in the patient's chest (CDC, 2013). The majority of literature focuses on (CLABSI) among patients in nononcology settings and few studies focus on patients in the oncology setting especially those who are neutropenic post chemotherapy. The aim of this review is to explore literature regarding CLABSI incidence, During Neutropenia among Oncology Adults Post Chemotherapy and methods used for prevention and management.

Methods

To critically examine and explore the body of knowledge regarding CLABSI among the neutropenic oncology patients, a comprehensive literature review was conducted using the electronic databases PUBMED, OVID, Science Direct, and Springer. The following key words were used to search the electronic databases: Neutropenia, CLABSI, oncology patients.

Searching the above mentioned databases about 56 articles were allocated. All were obtained and reviewed based on a specific inclusion criteria:

1- Research based study.

2- Focused on CLABSI among oncology patients.

3- The entire population are adults.

4- Investigate CLABSI during the state of neutropenia.

Based on the inclusion criteria a total of 10 articles published between 2009 to 2013, were selected and formed the basic skeleton for the review, except one article that was published in 2007; most articles were published in nursing and medical journals. The articles included in the study focused on the methods of management, setting of infection incidence, and types of infection incidence. Countries in which the selected articles were conducted are United States of America, Australia, Japan, Netherlands, and Italy.

Methodological Characteristics

The 10 studies which composed the body of this integrative research review were quantative; 4 studies were clinical trials, 4 descriptive correlational studies, and 2 reviews. Although only 10 studies were used in this review, they cover a wide range of problematic aspects and mention the people who are most at risk and preventive measures to handle the problem. Almost none of the studies were based on a theoretical model rather the authors define the concepts they addressed into conceptual and operational definitions.

Sample Characteristics

The sample sizes in the 10 studies in this review ranged from 120 to 1076 patients adults with cancer between ages of 16 to 85. Cancer types in the majority of the studies were not mentioned except in 2 studies which classify them as hematological and non hematological malignancies and one study mention the status of neutropenia among the patients. The studies were conducted among patients with cancer either with hematological malignancies or no hematological malignancies and also address patients who were not cancer patients regarding CLABSI, such as patients who underwent bone marrow transplant.

Results

Despite advancements in the treatment and supportive care of patients with cancer, neutropenia remains the major side effect of most anticancer regimens. Infections occur frequently in neutropenic patients and are associated with considerable morbidity and mortality. The most common sites of infection encountered in patients with neutropenia are: Respiratory tract infections occur most often followed by bacteremia (including central line associated bloodstream infection-CLABSI). (Nesher, et al 2013). There was no apparent association between number of hospital beds and infection rates (Crystal et al 2012).

The most common organisms isolated from CLABSI are coagulase negative staphylococci (CoNS), and S. aureus. Other common organisms include Bacillus spp., Corynebacterium spp., Pseudomonas aeruginosa, Enterobacter spp., Acinetobacter spp., and Candida spp. (Nesher, et al2013) (Isaac, et al 2013).

Factors associated with CLABSI included: type of CVAD, greatest for non-tunneled lines and tunneled lines, compared to peripherally inserted central venous catheter (PICC) lines and CLABSI was greatest for aggressive hematological malignancies and least for esophageal, colon and rectal cancer tumors; side of insertion, greatest for right-sided lines and number of prior line insertions (Mollee, et al 2011).

In patients with aggressive hematological malignancies there was significantly more CLABSI with non-tunneled lines and a trend to more CLABSI with tunneled lines compared to patients with PICC lines, as well as increased CLABSI for right-sided insertions (Mollee, et al 2011).

The highest CLABSI rates were originated from the lumen used for blood product administration and for parenteral nutrition (Krause, et al 2013).

Patients who underwent allergenic bone marrow transplant (BMT) CLABSI were mostly associated with the status of neutropenia; it was higher in the neutropenic patients in general (Isaac, et al 2013).

Patients who underwent BMT infusion of doxocyclin were significantly associated with decrease in CLABSI rates, and didn't alter the time for the neutrophil engraftment (Okaily, et al 2013). On the other hand the use of ethanol lock in patients with tunneled catheters decreased the intraluminal infections, but this decrease was not significant (Slobbe, et al 2010).

The Exchange of the infected catheter with monocyclines and rifampin coated catheters were significantly associated with no disease recurrence or infection related deaths compared with removal of the catheter (Chaftari, et al 2011), and the use of ports for patients with cancer appear to be safe because it is associated with low incidence of complications like pocket infections, cutaneous infections, and occlusions. (Molin, et al 2011).

Conclusion

CLABSI is still a major problem facing health care workers worldwide, especially among cancer neutropenic patients. Methods to decrease incidence, and prophylactic management are promising although good methods are available, the reduction in CLABSI rates will lead to decreased mortality and morbidity among the affected patients, which also will decrease the burden among the health institutions treating this type of hospital acquired infection.

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