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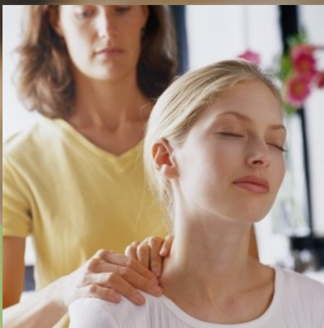

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CONTENTS

1. Factors contributing to running injuries
   A narrative Review
   J Phillips, C Hendricks 1

2. Tales of gender bias in the workplace: Female sport administrators experience of differential treatment
   S Titus 10

3. Community Based Nursing education landscape in South Africa
   A Literature Review
   NG Mtshali 18

4. Medical assessment of food handlers in a tertiary institutions in Nigeria
   JI Anekosan, ... 27

5. Experiences of persons with physical disabilities regarding rehabilitation services
   A systematic Review
   A Kumerenzi, J Frantz, A Rhoda, N Mlenzana 33

6. Sexual behaviour of some secondary school students in Benin City Nigeria
   J Afemikte 40

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The JCHS is a peer reviewed journal, published bi-annually. It covers a wide interest in community and health science related topics. The features that make JCHS so unique are:

- *It offers a platform debate between various disciplines which is essential in helping us to understand and learn from each other.*
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- *The editorial team encourages original research but support the publication of scholarly papers and scientific systematic reviews.*

Prof. Jose Frantz
Editor
Journal of Community and Health Science
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Factors contributing to running injuries
A narrative review

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Abstract

Design: A narrative review

Purpose: The purpose of this paper is to highlight some common extrinsic and intrinsic risk factors associated with running injuries that should be considered in the management and prevention of running injuries.

Background: Running is one the most common sports activity that is practiced throughout the world. This increase in popularity in running could gradually increase the incidence rate of injury thus contributing to overuse injuries. Research in the field of running injuries is vast and has been conducted over more than 40 years. It is however difficult to distinguish the exact cause of running injuries as the aetiologies are multifactoral and diverse.

There are various factors (extrinsic or intrinsic) that could be associated to running injuries. Extrinsic factors such as training methods, training surfaces or incorrect running shoes have been identified as some common risk factors. Some intrinsic factors such as muscle strength, flexibility and malalignment of the leg have also been identified which could further explain the aetiology of running injuries. Many researchers have identified various contributing factors to running injuries however there is a lack of conclusive evidence on the identified factors. Thus, the acquiring knowledge and scientific evidence about the risk factors related to common running injuries are important as it could assist in the treatment and prevention of long-term injuries.

Conclusion: To reduce the high incidence rates of running injuries and to promote independence in injury management, a rehabilitation programme consisting of a training programme which gradually increases mileage, frequency, resting periods, appropriate running shoes for different foot types; heel lifts to adjust malalignments of the leg; flexibility and strengthening programmes of the lower limb and the selection of appropriate training surfaces and terrain is needed.

Keywords: extrinsic factors, intrinsic factors, running injuries

Introduction

Running is an affordable and convenient sport which allows the athlete to participate in it at any time of the day. Running has considerable benefits as it improves general health and wellbeing and positively increases levels of physical activity in individuals (Paluska, 2005). Running thus addresses an important factor as physical inactivity is a contributing factor for many chronic diseases, decreased longevity, deterioration of physical function and obesity (Warburton et al., 2006). Although running has considerable health benefits, it can also contribute to lower limb injuries at both recreational and competitive levels (Paluska, 2005 & Taunton et al., 2003).

Running injuries could have a negative impact on the athlete as it can reduce activity within running programmes, lead to poor self-image and begin a sedentary lifestyle (Smith et al., 1990). For many athletes, the development of an injury is one of the main reasons for dropping out of a running program (Chorley et al., 2002). Thus, many runners sustain overuse injuries (injuries to the musculoskeletal

system) especially of the lower limb and often have a relapse in training or competitions as some injuries are not managed successfully (Van Gent et al., 2007). In order for the runner to be successful in races, the awareness of possible risk factors contributing to running injuries should be known. The runner would in turn seek appropriate management for their injuries and prevent future injury thus reducing the incidence of injuries (Buist et al., 2007).

Research in the field of running injuries is vast and can be dated back to the early 1970's. It is however difficult to distinguish the exact cause of running injuries as the aetiologies are multifactoral and diverse (Buist et al., 2007). Thus a need arises to identify the possible risk factors associated to running injuries to be able to manage and prevent injuries effectively.

Most running injuries over the past 40 years have been a result of training errors, excessive speed work and inadequate rest periods (Johnston et al., 2003 & Fields et al., 1990). Extrinsic factors such as training methods, training surfaces or incorrect running shoes have also been identified as risk factors. However, some intrinsic factors such as muscle strength, flexibility and malalignment of the leg have been identified which could further explain the aetiology of running injuries (Taunton et al., 2003). Thus, acquiring knowledge about the risk factors related to common running injuries are important as it will assist in the treatment and prevention of long-term injuries.

The purpose of this paper is to highlight some common extrinsic and intrinsic risk factors associated with running injuries that should be considered in the management and prevention of running injuries. Furthermore, this paper summarizes the literature reviewed pertaining the highlighted risk factors in the tables below which provides scientific evidence to the studies mentioned.

Extrinsic factors contributing to running injuries

The most common extrinsic factors associated with lower limb injuries in runners include training methods, training surfaces and running shoes (Ryan et al., 2006; Johnston et al., 2003; Taunton et al., 2002; Yeung et al., 2001). These common factors highlighted in studies as well as other factors will be discussed to present the literature available on associations to running injuries. Factors that would be discussed under training methods include training intensity (running speed or pace), volume of training (frequency and duration) and running distance.

Training Methods

The association between risk of injury and training methods such as training intensity, frequency, duration of training and running distance will be highlighted.

Training intensity is associated with running speed or pace in a running program. Derrick (2000) and Mercer (2002) reported that an increase in running pace often generates larger forces and moments on the musculoskeletal structures involved in running which could increase the likelihood of injury. According to Johnston et al. (2003), the application of the 10% rule whereby the training intensity is increased by no more than 10% weekly, could decrease the risk of sustaining running injuries.

The Frequency of training is related to the number of days the runner will train per week. It was found that women who had a fixed training program that participated in a group session once a week, were at an increased risk of injury (Taunton et al., 2003). Another researcher, Van Gent (2007), conducted a systematic review of determinants of lower limb running injuries and found that running more than 2 days per week could increase the risk of injury. Thus the recommended frequency of running to decrease the risk of injury should be 2-3 days per week.

The Duration of training relates to the running time in minutes per week required by the runner (Buist et al., 2008). Yeung and Yeung (2001) found that modification to a training schedule as an intervention could prevent lower limb running injuries. The results suggested that runners who trained more than 30 minutes a day had a higher injury incidence than runners who trained for 15-30 minutes a day. Thus, it is recommended to run for 15-30 minutes a day to reduce the incidence rate of injury.

Running distance or mileage is considered as the measurement in kilometers (miles) that the runner trains daily. Researchers (Macera, 1989 & Walter, 1989) reported that an increase in injury rate for

males is resultant from an increase in weekly distance beyond 64km. Furthermore, Johnston (2003) agree with this finding as runners need to follow a training programme specific to running experience and races because 60% of all running injuries are due to increasing running distance too quickly or doing “too much too soon”. The reported findings from Macera and Walter (1989), is more than 20 years old however a consistency in results with up to date researchers such as Johnston (2003) is found. Thus, an increase in weekly running distance of more than 60 km is possibly associated to running injuries and should be considered in the prevention of injuries.

Training surfaces

The different types of training surfaces can have an effect on load absorption mechanisms within the runner. Incorrect training surfaces and terrain can alter a runner's biomechanics and running performance, thus can be associated to running injuries.

Tesutti et al. (2008), found that running on asphalt (hard) surfaces provokes a bigger absorption load on the lateral rearfoot increasing the risk of injury. Whereas running on natural grass leads to smaller load absorption on the rearfoot, thus decreasing the risk of injury. A few researchers have identified in their studies that hard surfaces (road, asphalt and artificial track) can be associated to some common injuries to the knee e.g. patellofemoral pain syndrome (PFPS) and tibial stress syndrome (Tesutti et al., 2008). Running uphill, downhill and on loose surfaces like gravel roads and trail paths are commonly reported as factors contributing to patellar tendinopathy, iliotibial band syndrome (ITBS) and meniscus injuries of the knee respectively (Johnston et al., 2003)

Thus, according to literature, a variation in training surfaces (hard, soft, grass, gravel, hilly and flat) should be considered to prevent running injuries. Similarly, an optimal running surface should be smooth, resilient, flat, even and fairly soft like grass to avoid undue stress on the knee, ankle and foot (Academy of Orthopaedic Surgeons, 2003).

Runners that follow an incorrect training programme, which include improper surfaces, uneven sloped surfaces, too much mileage, frequency and duration, are more prone in sustaining injury to the lower limb than those who follow an appropriate training programme (Logan, 2006). Various training programmes are available and is specifically developed for different runners according their running experience (beginner (0-1 year), intermediate (1-3), advanced (3-10 years and older) (Runners-world, 2010).

Running shoes

Running injuries can occur during training or competing in a race wearing incorrect shoes that has insufficient height, rigid soles, twists easily or worn out (Kvist, 1994). Shoes that exceed 700km mark, loses the ability to absorb shock optimally and could be associated to injury (Fredericson, 1996). Running shoes are often selected on the runner's foot type to correct biomechanics of the runner (Moore, 2002). Schwellnus (2006), investigated whether runners who were advised on running shoes following a clinical lower limb biomechanical assessment prior to purchasing running shoes, had a reduced risk of developing a running injury when compared to runners who did not receive any advice. The results showed no difference in the incidence of common injuries between the runners that had advice on shoe purchase and the clinical lower limb biomechanical assessment and the runners that did not have an assessment and advice.

Thus, the advice on the selection of running shoes according to foot type does not influence the incidence of running injuries compared to the general advice on running shoe purchase. In conclusion, it is recommended to obtain running shoes with good shock absorption and once the shoe is worn out, it should be replaced immediately.

Stretching:

Stretching is often incorporated in exercise programmes and sporting codes as a warm up and cool down to prevent injuries. This commonly given advice is being practiced by many runners in the hope of reducing or preventing running injuries however it lacks scientific evidence.

Van Mechelen (1995) found that a lack of stretching as part of a warm up and cool down is suggested to be a possible risk factor to injury. However, according to Pope et al. (2000), it was found that pre-exercise muscle stretching does not produce a reduction in

the risk of lower-limb injury. Yeung et al. (2001) identified studies in their systematic review wherein runners had stretched before and after a training session and found that inadequate stretching for short periods of time can be associated to injury as mild stretching cause damage at a cellular level in muscles. According to Thacker (2004), stretching increases flexibility and could benefit performance or reduce the risk of injury. However it is suggested that stretching should be complementary to adequate strength training conditioning and an appropriate warm-up.

In overall, the results of the reviewed studies showed contradictory evidence in stretching and the reduction or prevention of running injuries. The data of studies relating to stretching habits were often obtained from surveys or self-reported questionnaires whereby recall bias should be taken into consideration.

Intrinsic factors contributing to running injuries

A combination of intrinsic factors (anthropometry, biomechanical variables, previous injury and running experience) are common factors found among athletes with running injuries. Anthropometry includes increased quadriceps angle, leg length inequality, age, gender, body mass index, poor flexibility, poor muscle strength, malalignment, arch type, rear-foot varus and tibia varum. Biomechanical variables comprise of kinetic or mediolateral control variables ie, magnitude of impact forces, the rate of impact loading the magnitude of active forces, increased forces of the medial side of the foot and the magnitude of knee joint forces and moments (Hreljac et al., 2006 & Johnston et al., 2003). The mediolateral control variables that are commonly associated to injury are the magnitude and rate of foot pronation.

Some common anthropometric factors such as arch height, arch type of feet, leg-length discrepancy, muscle strength, Q-angle and varus/ valgus alignment of the knee will be presented to identify the possible associations to injury.

Anthropometry:

Mckenzie et al.(1985) stated that biomechanical abnormalities are commonly overlooked as a risk factor in running injuries. Arch height and leg length differences can contribute to injury if not properly assessed and managed correctly. According to Wen (1998), it was found that arch height has no association to the risk of running injuries. Lun (2000), found no relationship between arch height and leg length inequality to injury.

The standard values for leg length is <0.5cm, >0.5-1.0cm, >1.0-1.5cm and >1.5cm. If the leg length difference is found to be less or more than 0.5-1.0cm, it has a leg length inequality or discrepancy (Taunton et al., 2002). Leg length inequality often results in muscle imbalances and contributes to injury associated to running. If the leg length inequality is not correctly managed by appropriate heel lifts on the shorter leg, it can result in pelvic tilt, scoliosis, hip and knee joint malalignment and excessive unilateral pronation (McCaw, 1992).

The different types of foot arches are the normal arch, the high arch (supinated) and the flat arch type (pronated).When these arch types are excessive (excessive pronation or supination), stress is transmitted by compensatory rotation of the tibia or lower leg which can contribute to foot, ankle, knee, hip and lower back pain (Johnston et al., 2003).

Johnston et al. (2003) found that one quarter of runners diagnosed with patellar tendinopathy had flat foot arch type which is associated to pronation. In conclusion, excessive pronation possibly due to flat foot arch type could be a risk factor to knee injuries, especially patellar tendinopathy.

Weakness of the hip abductor muscles could be associated to excessive pronation due to compensatory internal femoral and tibial rotation and sub-talar joint eversion which could possibly be associated to iliotibial band syndrome (ITBS) (Powers, 2003; Fredericson, 2000; Novacheck, 1998). Furthermore, weak hip abductor muscles may lead to increased hip adduction during the stance phase in running and possibly cause ITBS. Ferber et al. (2010), found that recreational runners with a previous history of ITBS showed a significant increase in hip adduction in stance phase during running, knee internal rotation angles and rearfoot invertor moment. Thus, ITBS is related to weak hip abductor muscles leading to abnormal running mechanics.

Runners with patellofemoral pain syndrome (PFPS) often showed weakness of the quadriceps muscle of the involved limb (Kannus et al., 1999). Mascal et

al.(2003) agree with this finding and suggests that an assessment of the hip, pelvis and trunk should be considered in patients presenting with PFPS to develop a rehabilitation programme with the focus on strengthening of the involved musculature. Similarly, Souza (2009) found that females with PFPS presented with increased hip internal rotation which is accompanied by decreased hip muscle strength and increased gluteul maximus EMG activity. Thus, in conclusion, literature illustrates that weakness of muscles in the hip and knee is related to common running injuries such as ITBS and PFPS respectively.

The Q-angle provides an approximation of the angle of the quadriceps muscle on the patella in the frontal plane. The normal Q-angle values are between 11° ± 3°(men) and 15° ± 5°(women) (Horton et al., 1989). An increased Q-angle cause a larger lateral pull on the patella against the lateral femoral condyle possibly contributing to patella subluxation and patellofemoral pain disorders (Powers, 2003). According to Rauh et al.(2007), it was found that a large Q-angle (⩾20°) was related to running injuries, especially to the knee. In conclusion, research has shown that an increased Q-angle (⩾20°) is possibly associated to knee injury.

The normal BMI is between 24kg/m - 26kg/m, anything less is underweight and anything more is considered overweight and extremely high values are obese. (Rauh et al., 2005). Taunton et al.(2003), found that an increased BMI (greater than 26 kg/m) was a protective factor against injury in men and could be due to the fact that these individuals train seldomly. There is however inconclusive evidence that an increased BMI is associated to running injuries.

Biomechanical Variables

A significant association was found between a group of injured runners and larger vertical impact forces and loading rates (Hreljac et al., 2000). Ferber et al.(2002), found that female runners with a history of stress fractures were associated to greater vertical impact ground forces, loading rates and peak tibial acceleration. Willems et al. (2006), found a strong association between runners with overuse injuries and an increased amount of pressure under the medial side of the foot during midstance. At the same time, it was reported that these injured runners revealed a great amount of pronation and possibly could be related to one of the mediolateral control factors. According to Hreljac et al. (2006), many researchers have studied the correlation of kinetic variables to overuse injuries but have not reported on the impact forces.

It is evident that biomechanical variables seem to have direct associations to running injuries but too little research has been conducted regarding these phenomena. Thus future research is needed to examine and report the associations between biomechanical variables and injury.

History of previous injury:

A history of previous injuries related to running is found to be an associated risk factor as runners tend to continue training whilst experiencing pain and this delays healing of the injured structures. This involves competitiveness as the runner will run excessive mileage, possibly sustain an injury but will ignore the signs and symptoms and continue to run through pain (Wexler, 1995). Similarly, Wen et al. (1998) agrees with the statement that a history of previous injury is significantly associated to running injuries.

Thus, once the athlete returns to running after the presumed recovery of injuries, the athlete tends to be more competitive and predisposes the already compromised injured structure to an increase in training and possibly causing re-injury (Ryan et al., 2006).

Running experience

According to Satterthwaite (1999), a significant association was found between hamstring and knee injuries and a first time participation in a marathon. This could possibly have been the result from a lack of running experience as it has been identified as a contributing factor to overuse injuries by Taunton (2002). It was found that inadequate running experience was likely to be associated to injury as both men and women that had a below average history of running (less than 8.5 years) was relatively at risk for tibial stress syndrome.

Summary

It is evident that various extrinsic and intrinsic factors are associated to running injuries. In order to reduce the high incidence rates of running injuries and to promote independence in injury management, an

appropriate rehabilitation programme is necessary to prevent injury. This rehabilitation programme should constitute a training programme which gradually increases mileage, frequency and include appropriate resting periods. It also needs to address other factors such as: appropriate running shoes for different foot types; heel lifts to adjust malalignments of the leg; flexibility and strengthening programmes of the lower limb and the selection of appropriate training surfaces and terrain (Johnston et al., 2003).

During the process of gathering literature for this review, it was found that there were few research articles to date about running injuries specifically in identifying risk factors, the incidence of injury and preventative strategies on a national level. This gap in literature is surprising as South Africa is one of many countries that host international marathons annually such as the Two Oceans Marathon and the Comrades Marathon. Therefore, one would assume that a vast amount of research would be available on the incidence and factors associated to running injuries. This gap in literature highlights the need for more updated research in this popular and growing sport on a national level.

The following tables present the characteristics such as the author and year of publication, the study design, sample group, outcome of study, identified risk factors and limitations of the various studies

Table 1. Study Characteristics

Author, year of publication	Study design and duration of study	Sample group	Outcome of study or Incidence of injury	Risk factors to injury	Limitations
Ferber et al., 2010	Cross sectional experimental laboratory design	35 female participants	The runners who had previous ITBS showed significant greater stance phase peak hip adduction and peak knee internal rotation angles compared to the control group.	* The study provides evidence linking atypical lower extremity kinematics and ITBS due to possible muscle weakness of hip abductor and external rotator muscles	*No measurement of hip abductor strength
Souza et al., 2009	Controlled laboratory study using a cross sectional design	21 females (intervention) with patellofemoral pain and 20 females (control) who were pain free.	Results show that females who complained of PFP had increased hip internal rotation and was accompanied by weak hip muscles. Thus the findings of this study supports the link between abnormal hip function and PFP.	Possible weakness of hip muscles, especially the external rotator muscles, could lead to increase hip internal rotation, which leads to injury.	*No cause-and-effect relationships. *Hip function was assessed and not patellofemoral joint instability.
Buist et al., 2008	Randomized controlled trial	532 novice runners. Control group (236) did a standard 8 week training programme. The intervention group (250) did a graded 13 week training programme based on 10% rule.	The outcome was the absolute number of running related injuries expressed per 100 runners. The incidence of running injuries of the standard 8 week programme was 20.3%. The incidence of the graded 13 week training programme was 20.8%.	It was hypothesized that an incorrect training programme could result in increased incidence of injury, however this study found no effect of a graded 13 week training programme applying the 10% rule compared to the standard 8 week programme.	*No assessment for modifiable risk factors *Factors such as intensity, frequency and duration of training and injury risk needed to be assessed. *Short study period of 13 weeks.
Tesutti et al., 2008	Prospective study: To investigate the plantar pressure distribution during running on natural grass and asphalt surfaces.	44 adult recreational runners	Natural grass is a safe and more compliant surface which will diminish the risk of injuries commonly caused by rigid surfaces like asphalt.	*Incorrect running surfaces, like asphalt surfaces	*A small sample size *A different design of study, perhaps a RCT to determine incidence of injury.
Rauh et al., 2007	Prospective cohort study	393 high school cross country runners	148 of the 393 runners were injured with cumulative incidence of 37.7%.The shin and knee was the most common site of injury.	*Increased Q-angle (>20°) for females and (15°-20°) for males, predictor for knee injuries	*The use of a self reported injury data sheet by participants and coaches.
Van Gent et al., 2007	Systematic Review	Selected 17 articles (13 prospective and 4 retrospective studies)	Incidence varied from 19.4%- 92.3%	*Increased running distance per week *History of previous injury	*Inadequate discussion on factors such as downhill running, biomechanical factors such as coupling forces and the degree of rehabilitation from previous injury.
Schwellnus et al., 2006	Retrospective cohort	94 participants for Experimental group and 83 participants in the control group	EXP= 6.04 per 1000 running sessions.(93 injuries) CON= 6.71 per 1000 running sessions.(115 injuries)	*Past history of running injuries is a strong predictor, however showed no significance between the past injury group and the no past injury group	*The small number of participants in the subgroups. *Recall bias as the runners completed the questionnaire. *The runners self reported their injuries.

Rauh et al., 2005	Prospective cohort study (5-8 weeks during 1996 summer preseason	421 runners	The shin was the most common location of injury. The incidence was 17.0 per 1000 athletic exposures. The females had higher injury rate than males and were at greater risk of running injury and disability. .	*Increase in number of days/ week of training *Large Q-angle (>20°) especially in females *History of previous injury.	*The coaches recorded the injuries of the runners and not a physiotherapist. *Recall bias as the participants self reported their height and weight.
Johnston et al., 2003	Peer Review, focus on the prevention of injuries related to running	Results retrieved from systematic review, comparison trials and expert opinions.	None mentioned	*Malalignment of the leg *Incorrect training surfaces *Incorrect running shoes *Muscle weakness and inflexibility of lower limb	None mentioned
Mascal et al., 2003	Case Report (14 week period)	2 cases complaining of patellofemoral pain	Both patients had reported a decrease in patellofemoral pain after completing a 3 month treatment program. The program consisted of non-weight bearing strengthening of the hip muscles, then in weight bearing positions using functional activities.	*Weakness of muscles of hip, pelvis and trunk that could lead to patellofemoral pain.	None mentioned
Taunton et al., 2003	Prospective Cohort (13 week period)	844 recreational runners	29.4% (249 injuries for 844 runners)	*Increased age in females (>50 yrs) *Running frequency (1 day a week-females only) *Previous injury that has not been completely rehabilitated.	*Clinic attendance was inconsistent, resulting in possible inaccurate recordings of 3 survey trials. *Running distance could not be included in analysis as exposure time was not recorded.
American Academy of Orthopaedic Surgeons, 2003	Online survey	853 runners responded to the survey	76% of 853 runners were injured.	*Inadequate resting periods after injury *Incorrect running surfaces *Improper running shoes *Inadequate warming up, stretching and cool down *Rapid increase in running distance	None mentioned
Taunton et al., 2002	Retrospective case-control study	2002 patients were included from period of 1998-2000	The knee was the most common location for injury, (PFPS- 331 patients; ITBS- 168; plantar fasciitis- 158; meniscal injuries- 100; patellar tendinopathy- 96)	*Younger age (<34 years) *Below average activity history (8.5 years) *Lower than average BMI (<21kg/m²)	* Factors such as malalignment and weekly running volume not included in analysis. *Could not report shorter height as a risk factor as its correlated to the factors above
Yeung et al., 2001	Systematic Review to examine evidence for prevention of running injuries	Selected 12 studies (from 1974-1998) that studied 8806 participants collectively	None mentioned	*Running frequency: (>5 days per week) *Duration of training (>30 minutes per week) *Running distance (>32 km per week) *Inadequate stretching for short periods	*Insufficient evidence from studies to show significance for stretching and reduction in running injuries.
Wen et al., 1998	Prospective study (32 week period)	255 participants	32.9% (84 injuries from 255) The lower leg and the knee was the most prevalent location for injury (32.1% and 31% respectively)	*Increased age *Increased weight *Leg length malalignment *Past history of injury *Increase in training hours per week.	None mentioned

mentioned in the narrative.

Conclusion

The various factors discussed in this review highlighted that there are numerous factors to consider before treating any running injury as the symptoms are possibly the result of training errors in conjunction with biomechanical imbalances. It is imperative to identify all the possible factors, extrinsic and intrinsic, associated to running related injuries to be able to assess and treat runners effectively and holistically. Treating the runner more effectively and efficiently will aid in the athlete's performance when returning to training and competitions.

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TALES OF GENDER BIAS IN THE WORKPLACE: FEMALE SPORT ADMINISTRATORS' EXPERIENCES OF DIFFERENTIAL TREATMENT

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Abstract

South African sportswomen have a proud history of using sport as a site of resistance against racism and sexism in society. However, 17 years since the advent of democracy, gender inequality still persists in South African sport. In traditional women's sport such as netball and softball, men can still be found in leadership positions while females are not well represented in the administration of traditional male sports such as rugby, soccer and cricket.

This study reports the experiences of female sports administrators at a provincial level in the Western Cape. A qualitative approach was used to explore reported differential treatment experienced by participants in their workplace. Candidates were purposively selected to reflect the historical and cultural diversity of women in the Western Cape which would add to the complexity of gender equity in the workplace. Data was collected through semi-structured interviews with thematic analyses of interview transcripts.

A key finding is that there is evidence to suggest that female sport administrators challenged practices of differential treatment, especially with regard to decision making and gender-role stereotyping. In addition, participants report their defiance to such acts of gender bias. The study concludes that even though the participants in this study acknowledged that differential treatment does exist, they do not experience it directly because they challenge such practices. One recommendation for this study is that leadership and mentoring programmes should be offered to women in leadership positions and those in prospective leadership positions.

Keywords: Gender bias, differential treatment, administration, experiences, leadership

Introduction

In the history of South Africa, sportswomen played a major role in the struggle to liberate this country from apartheid, especially during the 1980's and 1990's (Roberts, 1992; Hargreaves, 1997; Jones, 2001). Since the birth of democracy in 1994, gender inequality in sport in South Africa has been legislated against by a number of constitutionally binding acts. These include the National Sport and Recreation Act, 110 of 1998, The South African Sports Commission Act, 109 of 1998 and the South African Government's White Paper on Sport and Recreation (2010). The government sector has, to a large extent, developed policies and constitutionally binding acts which have impacted positively on the gender equity situation in South Africa (South African Sports Commission, 2004). Today, the South African constitution prides itself on the fact that it guarantees everyone the right to equality and equal opportunities. To this end, South Africa has the third highest proportion of women employed in managerial positions (Garson, 2005). Furthermore, in 2004, 30 percent of parliamentarians were women, placing South Africa eighth on the global scale. Today, South African women hold 44.5 percent of seats in parliament, now ranking us fourth on the global scale (Women in parliament, 2011).

The abovementioned developments are an indication that the intention of the South African government is to create awareness around gender inequality in sport, as well as to remove barriers which limit women's access to sport. Thus governmental policies and politicians should be the main cohorts in advocating and promoting gender equality in sport in South Africa (South African Sports Commission, 2004). There is no doubt that the implementation of equal opportunity policies in

South Africa has resulted in the advancement of women into leadership positions, but it would be naïve to assume that much has been done to enforce the implementation of such policies (South African Sports Commission, 2004). To this end, The Minister of Sport and Recreation South Africa stated that: “we are duty-bound to double our efforts living no stone unturned in our pursuit for the total emancipation of women and the creation of an equal society in which women freely participate in society in any given area including sport” (Mbalula, 2010).

A particular concern to the proponents of gender equality is that on all levels (public, private and sporting sectors), there is a tendency in South Africa to focus on class and racial dynamics in sport at the cost of gender issues, especially at a level of leadership and management (Jones, 2001). In addition, there is a tendency to treat women as recipients of state policies rather than being used as agents in the construction of these policies (Seidman, 1999). Although, the South African government has shown its support for the empowerment of women in management positions, research indicates that there are still too few women in senior management and leadership positions in sport within government (South African Sports Commission, 2004). Various international declarations have provided principles for policy development with regard to gender equality in general and sport specifically (South African Women, Sport and Recreation, 2003). South Africa has pledged support to international policies and declarations in its attempts at intervention to address gender inequalities in South African sport. These policies include the Beijing Platform for Action in 1995, The Brighton Declaration of 1994, The Windhoek Declaration of 1998 and The Magglingen Declaration in 2003 and 2005.

Davis (2003) suggests that gender bias is demonstrated in the form of differential treatment toward one sex. It also refers to the apparent non-achievement of women as a result of not being given equal opportunities. While not clearly documented, there is support that suggests that female sport administrators, cross-culturally, are more alike than disparate in their demographic and personal characteristics (Gregory cited in Nath, 2000). Acosta and Carpenter (2003) indicated that women are subjected to differential treatment on the basis of their gender and that women who work in male dominated arenas tend to be assertive and objective, whereas men in managerial positions tend to be sensitive to the needs of women in order to eliminate overt differential treatment. In most sport, women perceive themselves as constantly being in a continuous struggle with men and there is a tendency to allude to a rigid system of male domination about the intensity of male prejudice, and the resentment, chauvinism and coercion they experience from their male counterparts (Hargreaves, 1997). Furthermore, the lack of female leaders in sport and recreation in South Africa impacts negatively on the under-representation of women in leadership positions (South African Sports Commission, 2004).

In South Africa, gender-role stereotypes are aligned with the fact that in most provinces in South Africa, women serve in less powerful positions, such as secretaries, on sport executive boards and committees as opposed to being the chairperson or vice chairperson. According to the South African Sports Commission (2004), in several provinces in South Africa, women are elected as secretaries and treasurers where they are inundated with administrative tasks and with relatively limited decision making power. Although selection criteria should be based on personal characteristics, leadership abilities and expertise, gender bias is practised in the workplace of many sport administrators in South Africa as a result of the gender roles which are ascribed to them. These stereotypical beliefs are perpetuated in the workplace of female sport leaders as gender stereotypes of women as leaders are still detectable in many sport organisations (Klene cited in Jackson, 2001). The central message is that leadership is strongly embedded in gender stereotypes. Middlehurst (1997) reported that common perceptions of appropriate leadership behaviours associate these with stereotypically masculine characteristics like dominance, autocracy, decisiveness, initiative, courage and control. The image of male leaders is often seen as heroic and creates a customary background which embraces traditional masculinity.

This situation reflects the inconsistencies and gaps between policy and practice with regard to gender equity in South African sport. Although the

advancement of women in leadership positions in government has progressed and has, to a certain extent, been successful, the degree of equity has not been achieved for women in sporting structures. The South African constitution established the right of everyone to equality as well as prohibiting all forms of discrimination on the basis of gender. Therefore, the right of females to equal opportunities to access top sport positions has to be brought to fruition. It is therefore crucial to know more about women's interpretations and experiences of biasness on the basis of gender in order to offer recommendations to improve the situation.

This article will attempt to highlight the experiences of female sport administrators' experiences of differential treatment as a form gender bias in their places of work. Specifically it examines the female sport administrators' experiences of differential treatment, resistance to gender bias and discrimination and experiences of gender-role stereotyping.

Materials And Methods

This study employed a qualitative methodological framework using in-depth interviews. This method is useful because it allows participants to express themselves in their own words and offer personal views of their experiences and interpretations (Flick, 2002). The sample consisted of four purposively selected female sport administrators in leadership positions who have been involved in sport administration for ten or more years. They were from diverse ethnic and cultural backgrounds (i.e. different races) and were selected from an updated provincial federation database which was obtained from the Western Cape Department of Cultural Affairs and Sport (DCAS). All the women in this study have been involved in sport for more than a decade and are in executive positions of Chairperson, Vice-Chairperson, Director and Administrator in their sport Federations.

Two separate semi-structured, face-to-face interviews were conducted with each participant for 60-90 minutes each. The second interview was conducted shortly after the first one was transcribed after approximately two weeks. The core questions asked during the interviews allowed the participants to draw from their own experiences in their places of work. To this end participants were interviewed using one-on-one individual interview schedules comprising 18 key questions covering various issues relevant to experiences of differential treatment as a form of gender bias. Some of the questions included: Do you feel that you are subject to differential treatment on the basis of gender? At committee meetings, are your views, comments or suggestions often acknowledged? Are you subjected to repeated jokes or have you had your body commented on by your male counterparts? Do you know whether or not there is an income difference in terms of remuneration? Do you feel that there is certain gender roles imposed on you simply because you are female, for example are you repeatedly asked to make coffee or tea? If yes, are you comfortable with this?

Interviews were tape-recorded with the written consent of the participants and each interview was transcribed verbatim. The thematic data analysis entailed a thorough reading of transcripts by the researcher and coding and analysing the data into chunks of meaning. The second round of interviews was done to seek clarity and to gain a deeper understanding of participants' experiences as well as to explore emerging themes.

After the coding process, thematic categories were synthesized into a narrative summary which was aimed at reflecting the experiences of the participants. The researcher ensured reflexivity and trustworthiness whilst conducting this study. This was done through member checks, clarifying researcher bias by acknowledging past experiences, biases, interpretations and dilemmas, as these could shape the findings of this study. To this end, a reflective attitude was adopted by the researcher. Other methods of ensuring reflexivity and trustworthiness were also employed by doing peer review and debriefing. With regard to ethical considerations, permission to conduct this study was obtained from the Senate Higher Degrees Committee at the University of the Western Cape. With regard to ethical considerations of the participants, informed consent was obtained from each participant. With their permission, interviews were audio-taped. All information was treated with the strictest confidentiality and the identity of participants was protected in so far as their names or personal information were not included in the reporting of the findings. Pseudonyms have therefore been used. Participants were given access

to their transcribed information at their request and were allowed to amend or retract their transcripts, as well as offer additional information.

Results And Discussion

Results

All the participants acknowledged that differential treatment does exist in their places of work. As can be seen from the responses below, participants in this study experienced differential treatment directly or indirectly.

> *.... You do not allow it (differential treatment) to get to you... (Dolly)*
> *....it's that, they [the men in the organisation] go out of their way to make you feel at home in the meeting it's different to… (other) kinds of meetings...(Aeysha)*
> *....No, I don't allow it...This is because of the strong character I have...(Nolene)*
> *….as females we should not be complaining as we are treated well… mutual respect among all working in the organisation'….(Alice)*

Some of the participants were of the opinion that they are not taken seriously as sport leaders because of apparent assumptions that others might have that as women, their family commitments and domestic responsibilities outside the workplace is prioritized over their involvement in sport. In addition, male sports get more money because they are taken more seriously than female sport codes.

> *...They have this approach towards you instead of looking at you as a leader or as a female manager, it's almost this motherly approach...(Aeysha)*
> *... male sports probably get more money...(Alice)*

Although the participants report experiencing gender bias and discrimination, they do not allow it to impact negatively on their work. In order to be acknowledged, one has to be in agreement with male counterparts in order to be acknowledged.

> *….Of course, not because most of our issues have been dealt with in a sense [but], if you're not supporting my suggestion you are against me personally' …'I think when we speak the same language it is applauded and accepted but if we don't speak the same languages it is given a total miss over as if you are not even there'….(Dolly)*
> *....[women have to] go the extra mile [to be acknowledged])...(Aeysha)*

As can be seen from the below, views can be acknowledged either by force, or alternatively in an organisation in which policy and procedure are strictly followed and that all comments and suggestions go through the correct channels and that protocol is observed at all times as committee members follow their organisation's constitution.

> *... Once again we haven't got a lot of differences because we are working according to our constitution and house laws and byelaws etc...(Alice)*
> *... Yes, I can say I force myself...(Nolene)*

It appears that all the women in this study have their own assumptions about what is permissible with regard to the gendered roles they assume i.e. whether it is acceptable to "take minutes or being motherly". When the participants in this study perform activities gendered as female in their workplace they appear to do so of their own accord or voluntarily.

> *...I sometimes make tea at meetings, not always...(It's)the mommy in me...(Dolly)*
> *...Just because we are female does not mean that you have to feel intimidated and do certain things...(Aeysha)*
> *...We are women and funnily enough we do that....(Alice)*
> *... Because you are in that pattern and don't even think about it because it is expected of you to do it...(Nolene)*

Discussion

For the purposes of this article, differential treatment is described as a form of discrimination or gender bias on the basis of race, religion, age, origin, disability and gender. Furthermore, it is one construct of gender bias which is verified by giving preference to one sex over the other. It highlights the apparent non-achievement of women as a result of not being afforded equal opportunities (Davis, 2003; Weiler 2004). The experiences of the participants in this study with regard to gender bias and discrimination will be discussed under the following three sub-themes; (1) Experiences of differential treatment in the workplace, (2) Responses and

resistance to gender bias and discrimination (3) Experiences and perceptions of gender-role stereotyping.

Experiences of differential treatment

This study explored the participants' experiences and interpretations of being subjected to differential treatment on the basis of gender in their workplaces.

Dolly reported that she does not allow differential treatment to impact negatively on her work, whereas Nolene on the other hand believed that her strength of character did not attract differential treatment. While both acknowledge that differential treatment exist, both deal with it differently. Even though Alice claims that she is not subjected to differential treatment, she does not claim that there is an absence of differential treatment in her place of work. Unlike all the other participants, Aeysha felt that the males treat her differently. Although all the participants' interpretations are not all the same, they have all come to the conclusion that differential treatment does exist in their places of work.

Aeysha suggested that the males in her organisation do not see her as a woman and a leader, but as a "mother". By this she means that they not only see her as a mother first and a sports administrator second, but they could also view her as being protective, caring and kind. However, she also feels that the men in her organisation do not listen to her and are merely pretending to listen. This behaviour from the males at meetings indicates that they are actually trying to treat her differently because they see her as being different, i.e. a "mother" as opposed to a sports leader / administrator. Alice on the other hand equates differential treatment with the fact that male sports receive more funding than female sport. Although it appears that differential treatment does exist in the workplace of these female sport administrators, there is evidence that participants are resistant to this and also actively resist it impacting on their work. The findings in this section are supported by literature which suggests that most organisations choose to maintain the status quo is excluded from power networks (Hau Siu Chow & Crawford, 2004). Furthermore, Aeysha's experience of being seen as a mother as opposed to a sports leader is supported by Eitzen and Sage (1997) who indicated that the primary roles of women are to be seen as child bearers, home-makers and sex objects. Finally, in a study conducted in South Africa by Hargreaves (1997), she indicated that many women's sport was under-resourced compared to male sport. Alice's comments suggested that today not much has changed in this regard.

Responses and resistance to gender bias and discrimination

The following discussion elaborates on the participants' experiences of differential treatment as introduced above and specifically focuses on the acknowledgement of their contributions in meetings. Alice suggested that women in her organisation, as well as herself, were not treated differently on the basis of gender, and therefore neither she, nor the rest of the women in her organisation, are faced with the same challenges as the other three participants.

It appears from some of her responses that Dolly is not challenging the system in a way that addresses the incidence of differential treatment, but the way she chooses to deal with differential treatment can be seen as her taking responsibility for the way in which she responds to such treatment. She gives the impression that her views are acknowledged, however she makes it clear that her views are only acknowledged when it is aligned with dominant views of the sport organisation. This does little to create awareness with regards to the existence of differential treatment in her workplace. Unlike Dolly, Aeysha indicated that by preparing for meetings, she is resentful that despite making the extra effort, there is no guarantee that her views, comments and suggestions will be acknowledged. She previously alluded to the fact that men do not take her seriously because their image of her as a top sport administrator is overshadowed by the apparent image they have of her as a mother because she is a woman. Now she is indicating that even though she puts in more effort, it does not ensure that her views will be acknowledged. When one looks at some of the comments made by the participants, then as can be seen from the above discussion, the findings are partially supported by research done by Jackson (2001) who indicated that women's ideas are repeatedly reduced or ignored.

However, there are also other ways in which participants ensure that their views are acknowledged. All the respondents attached importance to being acknowledged. Even though

some feel they do not experience differential treatment directly in their workplace, there is evidence to suggest that the participants do challenge these actively, so that there are not direct incidents of differential treatment. Historically men have held the dominant positions in most sports structures in South Africa while women hold less “valued” positions within the same sports organizations. This is an example of a legacy of dominance which is perpetuated within the sporting environment. These findings are similar to Ragins (cited in Jackson, 2001) who reported that women, who move into higher positions in organisations, become more visible and unrestricted. However, there is a perception by women of increased pressure to work harder than their male counterparts, and that their actions are more scrutinized than their male counterparts. It is evident from the findings in this research that some of the participants felt that they needed to work harder to prove their credibility.

Experiences and perceptions of Gender-role stereotyping

With regard to gender-role stereotyping, the findings in this study show that there is a trend which exists in sport organisations whereby there is an expectation from male co-workers that female participants in this study are expected to perform activities such as taking making tea. Some of the participants were of the perception that they experienced gender-role stereotyping in the workplace and without realizing that they were ascribing to societal gender roles which are set aside for women.

There are various factors which influence and shape the participants' experiences, perceptions and practices of differential treatment, especially with regard to gender-role stereotyping. As can be seen from the responses, Aeysha appears to resent the fact that she is expected to perform certain tasks just because she is a woman. She appears to know that gender-role stereotyping exists in her workplace, but she does not allow herself to be intimidated to ascribe to it. Dolly admits to frequently making tea, her comment suggests that it takes an effort from her to refute the assumption of a gendered workplace. Nolene on the other hand admitted to performing tasks gendered as female without realising, challenging or negotiating her gender role with her male counterparts in the workplace. Similarly, Alice indicated that like Dolly and Nolene, she too ascribes to gender roles (of her own accord).

It appears from the responses that all the women in this study have their own assumptions about what is permissible with regard to the gender roles they assume. Men may also perform some of these roles without being realising it or being intimidated to do so. The findings of this study regarding the experiences of differential treatment in the places are supported by the research of Acosta and Carpenter (1994) and by Nath (2000) who similarly found that women are mistakenly stereotyped as being less knowledgeable and less competent that men in the workplace. Eitzen and Sage (1997) indicated that the gender roles ascribed to women classify them as inferior to and reliant on men. According to Foster (1999), management is an activity associated with male stereotypical attributes of competitiveness, hostility and rationality. The deep-rooted power structures in modern society places men in central and women in subordinate positions which involve domestic responsibilities, taking minutes or making tea. Research conducted by Eitzen and Sage (1997) shows that society envisages and socialises its young to ascribe to social role expectations for males and females in general. This is evident in the participants' experiences and perceptions of gender-role stereotyping as previously discussed. These findings debunk the findings of Jackson (2001) who suggested that women believe that men in their organisations respect them as potential leaders and did not support stereotypical beliefs about women in the workplace. Although this is the ideal situation within the sport environment, this is not true for the participants in this study. According to the South African Sports Commission (2004), gender bias is practiced in the workplace of many administrators as the gender roles ascribed to them are practiced by many sporting organisations across the country. Women, claim (Liddle & Josh as cited in Nath, 2000) that they are mistakenly stereotyped as being less knowledgeable, less able to meet able to meet the demands of the job, less competent than men, and in general have to work harder than men to get the same results. If Aeysha's comments are viewed in the light of the comment above, then one can appreciate her frustrations.

Limitations

Although the objectives of this study have been met, it is imperative that more research be conducted to further explore South African female administrator's experiences of differential treatment in the workplace with specific reference to gender-role stereotyping in the workplace. There is clear evidence to suggest that the females in this study experienced gender bias in the workplace with regard to differential treatment in the past. However, it appears that these women are of strong character and that their experience and expertise contributes to the ease with which they can challenge practices and behaviours and attitudes which promote gender bias in their places of work. Although the study is limited by the small number of participants, the study does provide some insight into the continued experience of gender bias by female sport administrators in contemporary South Africa.

Conclusions

From the participants' experiences of differential treatment, the following key findings were raised and conclusions are drawn;

- Findings indicate that participants in this study experienced differential treatment directly or indirectly and that differential treatment exists in the workplace of these female sport administrators. These participants do not feel equally valued in a way they observe their male counterparts being valued. This is especially true when they were of the opinion that they are not taken seriously as sport leaders. It can therefore be concluded that the apparent assumptions that others might have that as women; family commitments and domestic responsibilities outside the workplace are prioritized over their involvement in sport impact on the way these women are treated in their place of work.

- Although it appears that differential treatment does exist in the workplace of these female sport administrators, there is evidence that these women are able to diligently deal with practices of differential treatment. Furthermore the findings show that three of the women in this study challenged differential treatment practices especially in the boardroom. The fourth woman (Alice) offered no insight or personal accounts as to whether she was treated differently. It can therefore be concluded that participants in this study challenge their male counterparts on issues related to differential treatment.

- With regard to gender-role stereotyping, the findings in this study show that there is a trend which exists in sport organisations whereby there is an expectation from male co-workers that female participants in this study are expected to perform activities such as making tea. These tasks, are not forced on them, and are done of their own free will. However, it is not conclusive whether gender-role stereotyping is carried over from the home into the workplace, nor that it actually exists in their place of work, nor whether it is their perception that it does exist in their place of work.

Recommendations

The following recommendations are being made on the basis of the findings with regard to gender bias in the workplace of these participants;

- Participants in this study demonstrated skills and tools they have used to manage gender bias in their places of work. This indicates how important knowledge and experience is in gaining confidence to manage gender bias. It is therefore recommended that leadership and mentoring programmes should be offered to women in leadership positions and for women who are in prospective leadership positions. This will better empower and equip them with the skills necessary to deal with and transform incidents of gender bias. It will also help them become more confident in themselves and their ability as leaders and possibly make themselves less vulnerable to gender bias practices, especially harassment and intimidation.
- Participants highlighted the importance of abiding by the constitution and therefore sport organisations should review constitutions more regularly to ensure observation of protocol. In this way, they will abide by their constitution which would ultimately create a forum whereby the

opportunities given to both men and women will be equal.

- Although some opportunities were missed in the exploration of gender-role stereotyping, more research needs to be conducted to unravel the complexities with regards to the way in which men and women interact in the workplace.

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The Emergence of Community-Based Nursing Education Programmes in South Africa

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Abstract

The worldwide changes in the health systems, including the adoption of a primary health care approach, has contributed significantly to the paradigm shift from hospital-based education to community-based education. Community-based education is favoured because of its potential to stimulate interest amongst graduates to serve in rural and under-resourced settings and it has a potential to equip graduates with competencies required to function in a primary health care oriented system. In South Africa, community-based nursing education was first reported in university-based schools of nursing in the early 90's and the first nursing college piloted community-based nursing education in the late 90's. Most of the initiatives were supported by the Kellogg Foundation. The nursing schools adopted a problem-based approach to learning and adult learning principles in their community-based programmes. Literature however reflects that there have been some adjustments in the initial programmes to ensure effective learning and sustainability of these initiatives.

Introduction

The current health systems worldwide require skilled health workers who can provide care in all health settings, addressing the health needs of all clients across their lifespan. This requires a paradigm shift from hospital-based education and training to education which provides students with an opportunity to learn in non-traditional clinical settings outside the four walls of the hospital or health clinic, such as in community-based settings. Such clinical settings expose students to healthy clients before hospitalisation, where the focus of care is on health promotion and illness prevention. Community-based education is one approach that is used in disciplines such as nursing to facilitate such learning. In South Africa, community-based nursing education was first reported in the early 1990s.

Background

Community-based nursing education came into being as a result of the move towards community-oriented care which was first reported in South Africa as early as 1940. Two physicians in the Pholela community in Bulwer, KwaZulu-Natal introduced this system of care. This was partially adopted by many other countries, and was used by the World Health Organisation in their definition of primary health care (Mullan & Epstein, 2002). This paradigm shift impacted on health professional education promoting the adoption of community-oriented or community-based education.

Community-based nursing education is education that uses the community extensively, especially the under-developed and under-resourced settings for learning purposes, in order to enhance the relevance of nursing education and cultural sensitivity to the needs of the South African population (Mtshali, 2005). In South Africa, university-based nursing schools were the first to adopt community-based nursing education. The University of KwaZulu-Natal previously known as the University of Natal introduced community-based nursing education in 1994 (Gwele, 1997, Uys, 1998); the University of Witwatersrand followed in 1995 (McInerney, 1998); the University of the Free State in 1997 (Fitchardt & du Rand, 2003; Fitchardt, Viljoen, Botma, & du Rand, 2000) as well as the Walter Sisulu University School of Nursing previously known as the University of Transkei (UNITRA), (Mdalane, 1997;

Nazareth & Mfenyane, 1999; Mtshali & Gwele, 2003). Community-based nursing education is also reported in the University of the Western Cape and the Pretoria University of Technology and Frere College of Nursing, the first college to pilot community-based nursing education in 1997 and which changed the curriculum in 1998, as well as the Lilitha College of Nursing and its seven satellite campuses, (Mtshali & Gwele, 2003) and the KwaZulu-Natal College of Nursing, mainly the Edendale Campus. The Kellogg Foundation funded most of these initiatives. This paper focuses on four university-based nursing schools (University of KwaZulu-Natal, University of Witwatersrand, Free State University and Walter Sisulu University) which have published information regarding their programmes.

Methods

A narrative literature review which included work published or documented from 1994 to 2011 was used as a source of data. Data sources included journal articles, research-based chapters in books, dissertations and theses, as well as conference papers.

Results

A number of themes emerged from the data. These included rationale for change, guiding theoretical basis, the process of change, teaching/learning process, the nature of community-based nursing activities and issues of concern.

Rationale for Change

A number of reasons were cited for the adoption of community-based nursing education in South Africa. The nursing schools were responding to national and international forces. For example, according to Fitchardt and du Rand (2000) and Fitchardt et al. (2000), the powerful global movement towards Health-for-All by the year 2000, coupled with the necessity to focus national health care delivery systems on primary care (Dana & Gwele, 1997) had an impact. The Agenda for Action by the WHO in 1991 made clear the role of health professionals' education institutions towards meeting the needs of the population they served. Internationally, universities were challenged to prepare health professionals for the prospective needs and demands of the population they served (Fitchardt & du Rand, 2000; Fitchardt et al., 2000).

The political changes in South Africa, the Reconstruction and Development Programme, as well as the change in the National Health Care Policy post-1994, with the emphasis on PHC as a means to improve and maintain the health of the South African population, more especially communities in under-serviced areas, demanded a paradigm shift in the education approach used (Fitchardt & du Rand, 2000; Fitchardt et al., 2000; Gwele, 1997, Dana & Gwele, 1997). Health professionals' programmes were to be developed to facilitate the production of graduates with the relevant knowledge and skills to serve the South African population (Fitchardt & du Rand, 2000; Fitchardt et al., 2000; Gwele, 1997) and to meet the needs of the rapidly changing health care climate that is challenging the abilities of the professionals who provide health care (Carter, Fournier, Kielh and Sims, 2005; Lashley, 2006) As a result, one of the premises of the University of KwaZulu-Natal's curriculum was that it had to be relevant to the needs of the diverse communities served by its graduates, and that the curriculum content had to be determined by community and learner needs (Gwele, 1997; 1999) to produce graduates in possession of meta-cognition skills (Gwele, 1999; Mtshali & Middleton, 2010).

The 1996 recommendations by the National Commission of Higher Education (NCHE) were cited as one of the stimuli for change (Fitchardt & du Rand, 2000; Gwele, 1999). The NCHE recommended that health education institutions should revise their curriculum to equip the health care students and health personnel educators with the comprehensive knowledge, competency and attitudes to respond to the health care needs of the population of South Africa. Explaining this statement further, Fitchardt et al. (2000) stated that, "In reality this meant contextualising of learning and narrowing the gap between the curricula content and realities of health care practice" (p. 87). Decontextualised learning was also pointed out by Gwele (1997; 1999) who indicated that it resulted from fragmented clinical learning that made meaningful learning impossible. According to Gwele (1999), there was no immediate application of learning from the clinical settings to the classrooms and vice versa, hence the need to review the existing programmes. McInerney (1998) also cited knowledge explosion as one of the reasons for change so as to equip students with lifelong learning skills to cope with the overload.

The literature also revealed that the schools of

nursing were using teaching methods which were not adequately synchronised with the principles of adult learning. There was no active learning or active involvement of students thus promoting passive academic behaviour. As a result, the students were deprived of the opportunity to develop problem-solving and critical thinking skills (Mtshali, 2009; Fitchardt et al., 2000). The schools had to adopt community-based learning using a Problem-based Learning (PBL) approach to promote adult learning, and to facilitate the development of transferable core skills (Adejumo & Gangalimando, Gwele, 1999; Mtshali & Middleton, 2010).

Walter Sisulu University also cited inadequate allocation of resources, especially to health and rural health care settings (Nazareth & Mfenyane, 1999). This lack of resources resulted in limited health care. In addition, the province experienced problems retaining graduates because most of them were attracted to career opportunities in urban areas. Nazareth and Mfenyane (1999) reported that there was a need to recruit and train people in settings that resembled those in which they would serve on graduation. This led to a change from hospital-based training to community-based education.

Guiding theoretical basis

Guided by the health-to-illness continuum model, all programmes adopted a problem-based approach and used community settings extensively as a learning environment (Mtshali & Gwele, 2003; McInerney, 1998). According to this model, the health needs and problems identified from community settings inform the curriculum content, thus making it relevant, up to date, and context driven (Mthembu & Mtshali, 2010). The programme is structured in such a way that nursing students receive exposure to community-based learning experiences as early as their first year of study. They are first introduced to environments with healthy individuals and groups where the focus is on health promotion and illness prevention. They are then introduced to primary health care clinics, hospitals and later to rehabilitation services at a community level (McInerney, 1998; Madalane, 1997). This, according to Mtshali, (2009) gives students a holistic approach to care and equips them with comprehensive skills enabling them to provide care at all levels of the health care system, and the ability to provide care across the lifespan.

One of the guiding principles involved which was noted in the existing programme is community involvement and community partnership, which, according to Yousif, (2007) is essential in community educational programmes' decision-making and its success. On inception of the programmes, the schools of nursing entered into partnerships with surrounding communities (Adejumo & Gangalimando, 2000). The University of KwaZulu-Natal's School of Nursing, using a multidisciplinary approach that involved students from other health science disciplines entered into partnership with a rural community (Valley Trust Community), a semi-urban community (Austerville Community) and an urban community (Point Community). The Free State University's School of Nursing entered into a partnership with the Mangaung community in the early 90s, and formed a University Community Partnership Programme, (Fitchardt et al., 2000). The involvement of the School of Nursing in this partnership led to the realisation of the importance of a curriculum determined by the needs of the community (Fitchardt, et al, 2000). Wits University's School of Nursing partnered with communities such as Muldersdrift, Alexandra and a Hillbrow community (Hlungwane, 1999; Tshabalala, 1999; hptt://www. wits. ac.za/med/nursing). The Walter Sisulu University School of Nursing joined the Community Health Partnership which was formed in 1991 with the Medical School which now includes disciplines such as pathology, microbiology, basic sciences, social work, other clinical disciplines and a health promotion unit. According to Nazareth and Mfenyane (1999) all the partners are involved in the teaching and learning of students.

The Process of Change

Intensive and detailed preparation for change seemed crucial across all schools for the success of the new programmes (Gwele, 1999; McInerney, 1998, Fitchardt & du Randt, 2000; Fitchardt et al., 2000; Madalane, 1987). Time and resources were invested in a number of ways. For example, workshops were held to familiarise partners with the new approach. A number of training sessions were conducted to develop the staff, especially for their new roles as facilitators in PBL rather than serving as teachers. They also attended several international conferences and workshops on the role of facilitators and the process of facilitation. Networking with institutions running community-based nursing education and problem-based learning programmes

was important, and the exposure of the rest of the staff to field trips in these schools was crucial in creating a sense of understanding and coherence during the implementation of the new programme. McMaster in Canada is one of the universities that supported most of the initiates. As part of the networking process, universities such as Natal and Free State University obtained membership of the International Network of Community-oriented Educational institutions (Fitchardt and du Randt, 2000; Fitchardt et al., 2000; Uys, 1997).

According to Fitchardt et al. (2000) initiating the process of change at the University of Free State was not without difficulties. Numerous doubts and questions concerning the new curriculum emerged internally and externally. To overcome these barriers, the school implemented Kaufman's four change strategies cited by Fitchardt et al (2000). The strategies implemented involved (a) developing a broad ownership for the proposed innovation, (b) winning converts by inviting participation, (c) forming new alliances to broaden the support base and, (d) sharing success. It was crucial for the planners to build support internally and externally for the successful implementation of the programme. Support was obtained from different departments within the university, as well as from the relevant communities and government institutions.

Teaching/learning process

Although nursing schools shared some similarities in the teaching and learning process, they also approached teaching and learning differently. What was common was that all schools used community-based problems as a starting point. Problems were however presented to students either as raw health problems from the community settings, or in the form of case studies which were based on community problems.

The University of KwaZulu-Natal's School of Nursing according to Adejumo and Gangalimando (2000) divides students into three small groups of about ten each and places them in three different communities; urban, suburban and rural (Adejumo & Gangalimando, 2000; Gwele, 1997, 1999; Uys, 1998). The placement of the students in the community settings takes place during university vacations to avoid clashes with courses run by other faculties (Gwele, 1997; 1999). According to Gwele, (1997; 1999) this occurs among the second year students where community-based nursing education is predominant. The students start their academic year five weeks earlier than the university timetable. The first two weeks are for orientation to community-based learning, and the remaining weeks are used for hands-on learning experiences.

According to Mthembu and Mtshali Gwele (2011) and Gwele (1999), the University of KwaZulu-Natal's School of Nursing follows Kolb's Experiential Learning Cycle. The January period is used to expose students to concrete experiences, conducting community surveys, family studies and epidemiological study. The initial class interactions are used to reflect on community-based learning experiences and on organising community health problems and needs in order of their priority in preparation for group discussions. During group discussions the students interrogate identified health problems in relation to existing theoretical or empirical evidence (Mthembu & Mtshali, 2011). The April vacation is used for the validation of community problems identified at the beginning of the year. The students give feedback to the community on the problems identified at the beginning of the year as part of the validation process, and they are requested to arrange them in order of priority. This assists the students in identifying a priority problem to be addressed during the winter vacation. After validation of these problems, community meetings are conducted with the purpose of prioritising the problems identified, and deciding on one problem which the students can target for joint community intervention during the winter vacation. The community intervention provides a platform for the students to apply the knowledge they have constructed during class interactions. The whole community-based learning experience culminates with community members evaluating the whole exercise from the beginning of the year. A special day to show case community-based activities is held during the September vacation known as 'Expo Day' (Gwele, 1999). On this day, the three groups present their community-based interventions and reflect on their experiences and how those experiences have facilitated their personal and academic growth. As stated in Gwele (1999), the community members, nursing services and other health professionals, parents, university personnel, the students and prospective students attend the expo. The expo is also used as a platform to introduce new groups of students to community-based learning, as the community setting used is a totally different setting to

that of the hospital (Gwele, 1999).

The University of Witwatersrand, school of nursing uses a mix of authentic problems and problems presented in cases for teaching and learning. Small tutorial groups are used, within which adult learning principles are observed. In the tutorial groups, the students are presented with problems emanating from real life situations encountered in the community or in clinical situations. The students are expected to be actively involved in working on these series of health problems. The facilitator is there to assist in the learning process (McInerney, 1998). The whole learning process is supported by a wide range of educational resources - the library, expert lecturers and tutors, workshops, video and computer-based learning packages, lectures and seminars, site visits and clinical tutorials (http://www. wits. ac.za/med/nursing). During the first six months in the community-based nursing education the first year students are allocated to different community sites for orientation in respect of community issues, environmental health and community assessment (McInerney, 1998). Exposing the students to community settings as early as in their first year not only allows the students to get to know the community, but also permits them to attain a deeper understanding of the community and the real problems in the community (http://www. wits. ac.za/med/nursing).

The focus in second year at the Wits School of Nursing is on the individual suffering from illness, the disordered family and community (McInerney, 1998). It is at this level that the nursing students are more involved in Hillbrow Community Partnership Initiatives which are multi-disciplinary. Students participate in partnerships with students from other faculties such as environmental health, medical students, social work and other technikon students to conduct a community assessment. They compile a community profile on the health of the community in Hillbrow, and the surrounding community (Hlungwane, 1999). The third year students work at the clinics for their community-based learning experiences as a follow-up to the case scenario of a client who is discharged from hospital. They follow that client at the clinic and in his or her community for continuity of care (http: //www. wits. ac.za/med/nursing). In the fourth year, the students learn and deliver supervised services in relation to midwifery, which is referred to as women's health. At the primary health care clinics the students' focus is on maternal and child health (Tshabalala, 1999). They are placed at the clinics serving the community to which they have been exposed, and this placement gives them an understanding of the clients in their context. The nature of services and facilities in the health centre offers a conducive, multi-disciplinary environment for community-based teaching and learning of undergraduate students (hptt://www.wits.ac.za/med/nursing).

According to Mthembu and Mtshali (2011) and Mtshali and Gwele, (2003) the Free State University's School of Nursing uses case studies during class sessions. Cases are based on the problems either drawn from the community setting or the health facility as a context in which to learn problem-solving skills (Fitchardt & du Rand, 2000). Experts from other disciplines contribute to the formulation of these cases to facilitate a holistic multi-disciplinary approach to care. Fitchardt et al. (2000) reported that the principles underlying the teaching methodology used include a shifting of learners towards independent learning, moving away from the narrow world of the teacher and the text; the development of analytical and creative thinking; the development of self-directed learning abilities; the encouragement of cooperative learning; the integrated application of skills and knowledge in the context of practice, and the encouragement or motivation to engage in learning. Although the problems are presented in the form of case studies, the students get exposure to community settings where they also conduct community needs assessments, family studies, and implement their community-based projects (Mtshali & Gwele, 2003).

According to Fitchardt and du Rand (2000) the community is used extensively as a learning environment to give students an opportunity to understand the capacities and initiatives of the community they serve, as well as to sensitize them to different cultures. Because both the students and the community should benefit from the community-based nursing education programme, the community is also given an opportunity, through interaction, to understand the strengths and limitations of the health care system, and in that process of interaction to learn to take care of themselves (Fitchardt et al., 2000).

In the Free State University's School of Nursing programme, the community's involvement is more obvious during the placement of the students in the community (Fitchardt et al, 2000). The community

members accompany the students in the community setting to familiarise them with the environmental and cultural activities in the community. The community members also accompany those students who are not familiar with the language spoken by the community. The community sometimes assists by translating for some of the students who have a problem in understanding the language used by the community (Fitchardt et al., 2000). The community is used as an environment from which to derive problems which can be used in the classrooms as part of the curriculum content (Fitchardt & du Rand, 2000; Fitchardt et al., 2000).

The students are divided into small groups, with the facilitator facilitating their learning process. There is also a coordinator who coordinates community-based learning activities and accompanies students to the community settings. This person serves as a link between the school and the surrounding communities.

Madalane (1997) reported that in the Walter Sisulu University School of Nursing, the first year nursing students are placed in the community once a week throughout the year, while second year students spend three weeks and third years spend two weeks in the community. This means that the students are exposed to community-based learning as early as in their first year of study, and the community-based nursing education activities continue throughout the first three years of the programme. The students at the UNITRA are divided into small groups of about 10 with one facilitator (Madalane, 1997). The students are exposed to community-based learning activities throughout the programme.

Nature of community-based activities

The purpose of the community-based activities is to contribute to positive change in the community and to facilitate self-reliance and self-determination from the community (Mtshali & Gwele, 2003). Community-based activities include clean-up campaigns, health education and information sharing days, income-generating projects such as vegetable garden projects and sewing projects which are maintained by unemployed community members. Other community projects include a feeding scheme, a road safety project, and youth projects encompassing a variety of youth activities for youth development (Mtshali & Gwele, 2003; Banda & Bruce, 1999; Madalane, 1997).

Some Issues of Concern

Using authentic health problems acquired directly from the community to inform learning seems to pose a challenge, because the nature of the problems varies from time to time. Some of the problems may be omitted because they were not identified as such at the time of conducting a needs assessment, or were not rated as priority problems. More importantly, all disciplines have core knowledge which needs to be addressed. To deal with this challenge, nursing schools are now using both case studies and authentic problems (Mthembu & Mtshali, 2011; Mtshali & Gwele, 2003). Case studies are designed in such a way that the required core content is included in the case studies used (McInerney, 1998; Mthembu & Mtshali, 2011).

Security during the placement of students in the communities is one of the main concerns. Efforts such as working closely with local police stations and ensuring that the students have the contact details of police officers they can contact at any time if they encounter a problem while they are in the community; sharing a clear plan of community placement of students with key figures to ensure that they are aware of the days and where and when the students will be in the community; having a known safe community base such as a local clinic or school where the students gather in the mornings and at the end of the day have been considered (Mtshali & Gwele, 2003).

Transport for the students to the community is one of the challenges. For example, the University of KwaZulu-Natal had to change the rural community site because, although it presented a rich learning experience, it was inaccessible by public transport. The school managed well while they had the Kellogg Foundation's financial support because they could hire transport to take the students to any community site (Mtshali & Gwele, 2003).

Other areas of concern include the fluidity of some of the urban communities such as Hillbrow which was used by Wits and the Point area which was used by the University of KwaZulu-Natal. This poses a challenge when it comes to ensuring the continuity and sustainability of the community initiatives (Mtshali & Gwele, 2003), Competition over learning experiences and exhaustion of the community if the community is used by a number of institutions and disciplines can also become a problem (Mtshali & Gwele, 2003). Equal partnership between the academic institutions and community members

seems to be a challenge, as the parties have different agendas. This has to be clarified at the beginning of the partnership, and a consensus has to be reached regarding the role and benefits of both partners in the partnership (Linda, Engelbrecth & Mtshali, 2008; Mtshali, 2008; Mtshali & Gwele, 2003).

Most of the schools have lost the original teaching staff trained to implement community-based education. Some of these people have been promoted to higher positions which process has removed them from teaching, some have moved to other institutions, and others have resigned to pursue different careers or have retired. One of the institutions (University of KwaZulu-Natal) is addressing this challenge of staff shortages by involving postgraduate students who are doing nursing education. These students are responsible for the different small groups of students and they work under the guidance and leadership of academic staff who underwent special preparation in community-based education (Mtshali & Middleton, 2010). The Free State University's School of Nursing breaks the big group into smaller groups and the facilitator has class sessions with the groups at different times (Mthembu & Mtshali, 2011). There is, however, a staff member who is responsible for community-based learning activities who also ensures consistency is maintained in what the students learn (Mtshali & Gwele, 2003).

Discussion

The primary reason for the paradigm shift cited in the text reviewed was the drive to strengthen the health care system by producing competent nurses who are equipped to meet the needs of the South Africa population, including those in rural and under-resourced areas. More importantly, graduates produced must be socially accountable and culturally informed as South Africa is characterised by diverse cultures. This is in line with Kaye et al. (2007; 2011) and Villani and Atkins' (2000) argument for community-based education as it goes beyond cognitive capacities and encompasses the social and emotional aspect, and increases the interest in the uptake of careers in rural and under-resourced settings (Strasser, 2010). According to Anderson, Calvin and Fongwa (2011) cultural competence in nursing education is facilitated through using community settings extensively as one with the clinical learning settings, involving community members in the learning of the students, and through establishing effective partnerships with the communities. This approach ensures that the education of nursing students is also culturally relevant. Furthermore, while students' learning facilitates the development of relevant community-oriented skills, they also learn experientially by providing hands-on service to the community, thus increasing access to health care, as also stated in Kaye et al. (2011). Community-based education thus brings another dimension to the education and training of nurses.

One of the observations, however, is that although community-based education is implemented by a number of nursing education institutions in South Africa, there is no standardisation in the implementation of this phenomenon, which there should be, even if this means having a guiding framework by a regulatory body to monitor quality and consistency in the existing programmes. For example, the regulatory body could provide specifications regarding clinical settings such as hospitals and health clinics suitable for the placement of students. There are no criteria regarding the nature of community settings suitable for the placement of students.

The literature reviewed revealed a need for areas of further research. For example, there is limited reporting, if any, on the assessment of community-based nursing education in South Africa. More importantly, community-based education has been in existence for more than 15 years in South Africa, therefore there is a need to conduct a national study that will evaluate the implementation and the effectiveness of the existing CBNE programme. Most of the programmes were initiated with the financial support of external donors as they are heavily resource-reliant. Some of the programmes had to be modified as a result of limited resources. Institutions have to explore strategies that can be used to sustain their educational programmes when donor funds run out. Programme sustainability should form part of the initial planning process.

Conclusion

Community-based education is practiced by a number of nursing education institutions in South Africa. It is used as one of the strategies to produce graduates who are competent to meet the health needs of the current health system and the needs of the diverse South African population. The

involvement of the surrounding communities emerged as critical in achieving the desired competencies from the graduates produced. This paradigm shift was not only reported in the clinical settings used for the placement of students, it was also reflected in the changes and innovations in methods of teaching in the classroom, applying the principles of adult learning and student-centred and active learning. Implementing community-based education is not without challenges, but the nursing education institutions discussed came up with creative solutions to meet these challenges.

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AN ASSESSEMENT OF FOOD HANDLERS IN A TERTIARY INSTITUTION IN NIGERIA

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Abstract

Introduction: Food borne disease has become one of the most widespread public health problems associated with food safety. Food handlers are important in the transmission of this disease. Therefore, there is need for food handlers to meet certain requirements in order to be certified fit to handle food and the first essential is to have a complete medical examination at the time of employment and periodically thereafter.

Methods: A descriptive cross sectional study aimed at medical assessment of food handlers operating in food establishments in Ahmadu Bello University, Zaria-Nigeria was undertaken between 1st June and 1st October, 2008 and the data were analysed using SPSSversion15.0.

Results: The results revealed the mean age of the food handlers as 36.4years (age range 14-75 years); male: female ratio of 1:5. Fourteen (12.8%) of the 109 food handlers had mild hypertension and 13.8% had Ascaris lumbriciodes in their stool; 29 (26.6%) had initial and 2 (1.8%) had periodic medical examination.10.1% had skin sepsis; 20.2% and 56.9% had dirty hair and nails respectively. 73(67.0%) of the food handlers had no protective wears (apron, head cover) and the small percentage (13.8) of those that had protective wears did not use them regularly; most of the wears were dirty. None of the food establishments showed a license of registration.

Conclusion: It was recommended that all stakeholders with the responsibility of ensuring food safety in the university to be proactive in terms of regular monitoring of the food establishments, massive health education of proprietors, food handlers and the public.

Key words: *Medical assessment, food handlers, Ahmadu Bello University, Nigeria*

Introduction

Food handlers include those individuals employed directly in the production and preparation of foodstuffs, including the manufacturing, processing, catering, and hospitality and retail industries.

In many developing countries, inadequate practices and surveillance systems persist despite significant advances in the area of food safety (Marci et al., 2002; Rahul et al., 2007). Food-borne disease is an infectious illness contracted through the consumption of food or drink contaminated with pathogenic bacteria, toxins, viruses or parasites. It is an important public health problem in many countries and its incidence is on the increase globally (Cengiz et al., 2008; Wada-Kura et al., 2009) and the cost of food borne disease to the employer, individual and the society is enormous. In Nigeria the magnitude of the problem is unknown, as cases of

food-borne disease tend only to be reported where there are large outbreaks or where the consequences are so severe that individuals seek medical attention. However, the Food Standards Agency (FSA) and Health Protection Agency (HPA) estimate that in England and Wales in 2005 food-borne disease cost the economy just under £1.4 billion, with 765,000 cases recorded (FSA, 2006). According to the HPA, only 1 in 130 cases of food-borne disease are reported. Estimates suggest that infected food handlers cause between 4% and 33% of food borne disease outbreaks in the UK (Bonner et al., 2001; FSA, 2006).

Food handlers can be symptomatic or asymptomatic carriers of food-borne infections therefore; they have a major responsibility in the prevention of food related infections. Food handlers constitute an important segment of the society (Marci et al., 2002; Okojie et al., 2005) especially in the University community where a significant number of students and staff eat in food establishments because of their busy schedules. In some countries, Nigeria inclusive, public health code requires that food handlers undergo medical examination before they can be employed in food establishments (Musa & Akande, 2002; Tayfun et al., 2006). However, the content of medical examination varies and may include one or more of the following: physical examination, evaluation of immunization status, especially hepatitis A and enteric fever, pre-placement and periodic medical examination and laboratory examination of stool and urine of the food handlers. In view of the increasing population of students, staff and number of food service establishments in Ahmadu Bello University a descriptive cross sectional study designed to assess the medical profile (both physical and laboratory) of food handlers operating on the main campus of the university was conducted.

Methodology

One hundred and nine (109) of the 118 food handlers working in the 18 food establishments located at the main campus of Ahmadu Bello University were studied between 1st June and 1st October 2008. Structured interviewer-administered questionnaires were used to collect the data. The questionnaires were pretested among food handlers operating at the Kongo campus of the university and amended subsequently. A total of 118 questionnaires were administered (9 were incomplete) and information obtained included socio-demographic characteristics, Hepatitis A immunization status, pre-placement and periodic medical examination. Each food handler was physically examined to determine the degree of neatness/cleanliness of their hair, nails and skin, and scored on a 10 point scale as follows: excellent, good, fair and poor. Stool samples from each of the food handlers examined in the laboratory by direct smear and formol ether concentration methods as described by WHO (1991). The blood pressure was recorded with standard sphygmomanometers (mercury and digital types) using appropriate sizes of cuff. Measurements were taken after a 5 minutes rest by the same trained observer (the principal investigator) using the same machine throughout the study. The systolic blood pressure (SBP) was determined by the first appearance of Korotkoff sound (phase I) and diastolic blood pressure (DBP) was recorded at the point of the disappearance Korotkoff sound (phase V) in the case of mercury sphygmomanometer. After obtaining the blood pressure using the mercury sphygmomanometer, the second reading was obtained by digital BP machine and the average recorded. These measurements were repeated using the same machines for each of the food handlers on the 2nd consultation visit (when the food handlers were seen in the clinic by the principal investigator with their laboratory results).The food handlers were classified accordingly into those with normal, mild, moderate and severe hypertension in relation to their ages. Participant observation was used to inspect the food establishments,

The data were analysed using absolute numbers, percentages, range, mean and standard deviation as appropriate, using SPSS version 15.0 statistical software.

Ethical consideration

A written consent was obtained from the University ethical committee. Also the proprietors and the food handlers of the 18 food establishments gave consent after explaining to each the purpose of the study. Participation in the study was voluntary even though the proprietors were aware that such exercise is the only way the University licenses people that will be allowed to handle food in the university community. Confidentiality was taken seriously observed.

Results

The mean age of the studied food handlers was 36.4 years with age range 14 – 75 years. A total of 109 food handlers studied, 18(16.5%) and 91(83.5%) were male and female respectively. More than half (55%) of the handlers were single and 49.5% of Hausa ethnic identity. About 63 % were Muslim and a significant percentage (44 %) had no formal education. None of the food handlers had received immunisation against hepatitis A (Table 1).

The majority of the food handlers (81.7%) had normal blood pressure for their ages and 12.8% had mild hypertension. A significant number (73.4%) did not have initial (pre-placement) medical examination before being employed as food handlers. Only a small percentage (1.8%) had periodic medical examination since they were employed as food handlers. About 10% had skin infections in the form of boils, fungal infection and dermatosis. The food handlers with dirty hair and nails were 20.2% and 56.9% respectively. 73 (66.9 %) do not use protective wears such as head cover and apron.

Ascaris lumbricoides was the most prevalent intestinal parasite (13.8%) found in the stool of the subjects followed by Ankylostoma duodenale (hook worm) (8.3%) and a small percentage (0.9%) had S.haematobium and S.mansoni. However, 76.1% were free of any parasites (Table 2). None of the food service establishments showed license to operate either from the university authority or Sabon Gari Local Government Area. All the food establishments used an average of 2- 3 hand towels for cleaning of hands by the food handlers and the customers.

Table 1: Socio-demographic characteristics of food handlers (n= 109)

Variable	Number	Percentage
Age (years)		
11- 20	23	21.1
21- 30	30	27.5
31- 40	17	15.6
41- 50	19	17.4
51- 60	16	14.6
61- 70	3	2.7
71- 80	1	0.9
Sex		
Female	91	83.5
Male	18	16.5
Marital status		
Single	60	55.0
Married	35	32.0
Divorced	10	9.1
Widow	4	3.7
Ethnic group		
Hausa	54	49.5
Yoruba	79	7.3
Ibo	7	6.4
Other	40	36.7
Religion		
Islam	65	59.6
Christianity	44	40.4
Educational status		
No formal education	48	44.0
Primary	29	26.6
Secondary	25	22.9
Tertiary	7	6.4
Hepatitis A immunisation		
Those that had	-	-
Those that did not	109	100

Table 2: Assessed parameters of the food handlers (n = 109)

Variable	Number	Percentage
Blood pressure (mmHg)		
Normal	89	81.7
Mild hypertension	14	12.8
Moderate hypertension	4	3.7
Severe hypertension	2	1.8
Initial medical exam of the food handlers		
Those that had	29	26.6
Those that did not have	80	73.4
Periodic medical exam of the food handlers		
Those that had	2	1.8
Those that did not	107	98.2
Condition of the skin of the food handlers		
Those with skin sepsis	11	10.1
Those without skin sepsis	98	89.9
Condition of the hair of the food handlers		
Very dirty	1	0.9
Dirty	22	20.2
Fair	1	0.9
Neat	78	71.6
Very neat	8	7.3
Condition of the nails of the food handlers		
Very dirty	3	2.8
Dirty	62	56.9
Fair	2	1.8
Neat	38	34.9
Very neat	3	2.8
Painted	1	0.9
Protective wears used by the food handlers		
Had protective wears on	21	19.2
No protective wears	73	66.9
Have protective wears but not using them	15	13.8
Parasites found in the stool/ urine of the food handlers		
Ascaris Lumbricoides	15	13.8
Ankylosoma duodenale	9	8.3
S.mansoni	1	0.9
S.haematobium	1	0.9
No parasite	83	76.1

Discussion The age range of 14-75 years showed that people of different ages and marital status are engaged in the business. The fact that most of the food handlers are female indicates that the business is dominated by females. A research in Ilorin revealed similar finding (Musa & Akande, 2002). The findings also revealed that the business is not restricted to any particular ethnic group or religion. Level of education has important relation with knowledge and practice of food safety and hygiene of food handlers (Okojie et al., 2005). The significant percentage of the food handlers who did not have formal education is very likely to have poor knowledge of food safety and hygiene as shown by similar study (Okojie et al., 2005; Chukwuocha et al., 2009). Food handlers are at increased risk of

acquiring hepatitis A and their position in preparing food can make them sources of outbreak. Hepatitis A vaccine has proved to be cost effective measure in area where the disease is endemic (Marci et al., 2002).

The 18.0% of the food handlers found to be hypertensive (ranging from mild to severe) and were not aware of their condition. This could be a reflection of what is happening in the larger population of Nigerians whereby many people are walking around without knowing their blood pressure. The observation that a significant percentage of the food handlers did not undergo initial (pre-placement) medical examination is similar to the findings of a study in Benin (Okojie et al., 2005). World Health Organisation (WHO, 2000) stressed the need and the importance of medical examination of food handlers. However, some schools of thought are of the opinion that routine medical examination of food handlers is unnecessary and ineffective in the promotion of food safety (WHO, 1989; WHO, 2000). This is because the exercise is not only costly for the people involved; it does not prevent infection after the initial examination (WHO, 1989). A medical examination is nonetheless appropriate in investigating the outbreak of food borne disease or when a food handler reports ill. The very low proportion of the food handlers that had periodic medical examination may be attributed to ignorance on the part of the proprietors and food handlers, and lack of proper monitoring by the necessary bodies in the university.

Personal of the food handlers, food safety and hygiene are also important elements in the prevention of food borne disease. The conditions of the skin, nails and hair of the food handlers are also of paramount importance. Long, painted and dirty nails, unkempt and uncovered hair will serve as hiding places for micro-organisms that could contaminate food. Septic skin lesions could also serve as sources of bacteria such Staphylococcus aureus among others. The dirty wears of the food handlers could serve as culture media for the growth of microbes. The significant percentage of the food handlers that had their hair neatly done may be as a result of the importance that is usually attached to hair especially by female in Nigeria.

The presence of Ascaris lumbricoides, a faecal orally transmissible parasite may be indicative of a significant level of faecal contamination of the environment and low level of environmental sanitation. A study in Abeokuta showed the prevalence of Ascaris lumbricoides to be 54% among street food vendors (Idowu & Rowland, 2006). This higher figure may be as a result of the study population.

The selling of food by unregistered food establishments in the university is because of lack of proper supervision by the regulating bodies in the university.

The use of non-disposable hand towels by the customers and the food handlers can serve as route of transmission of micro-organisms from one person to the other and also contamination of food.

Conclusion

The findings of the study have highlighted the need for creating awareness among food handlers about various measures of maintaining food hygiene and good health through pre-placement medical and in-service medical examinations.

The recommendations include review of the present policy of pre-employment medical examination of food handlers, routine medical examination as a prerequisite for registration or licensing of food handlers and establishments, periodic training programs for proprietors of food establishments, food handlers and the public to understand the basic principles of food safety and their own responsibility in that respect.

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Experiences of persons with physical disabilities regarding rehabilitation services: A systematic review

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Abstract

Introduction: Rehabilitation has been found to improve the integration of persons with disabilities into the society. For rehabilitation to be effective, there is a need to seek patients' perceptions of the services rendered to them. Incorporating these perceptions in the rehabilitation process of patients is one of the ways that recognises patients' involvement in rehabilitation. The most common identified persons with physical disabilities' experiences that have been explored are: accessibility of rehabilitation services, interaction of service providers with patients, provision of information related to disability and rehabilitation. This review aims at highlighting the experiences of persons with physical disabilities regarding rehabilitation services as it relates to different studies.

Methods: This review involved a search of studies published from January 2000 to February 2010. The electronic search was done in CINAHL, COCHRANE, EBSCOHOST, MEDLINE and SCIENCE DIRECT databases. Articles were reviewed using the Critical Appraisal Skills Programme (CASP) and the Central for Evidence-Based Social Services Critical Thinking Tools and seven articles are included in the review.

Results and Discussion: Seven articles met the inclusion criteria: one cross-sectional and six qualitative studies. Most studies revealed that patients experienced challenges regarding rehabilitation services. These included but were not restricted to unavailability and inaccessible rehabilitation services. Other difficulties were identified in relation to the interaction of patients with service providers (inadequate communication between service providers and patients and ineffectual attitudes of service providers towards their patients) and poor information dissemination.

Conclusions and implications for practice: The review discuses the different number of experiences of persons with physical disabilities. The studies included in this review indicated that rehabilitation services for persons with physical disabilities remain challenged with regards to provision of necessary information related to these services and their accessibility. Rehabilitation challenges identified can be solved when there is a considerate investment to address these challenges by policy makers and rehabilitation management.

Key words: Patients' experiences, persons with physical disability, rehabilitation services, systematic review.

Introduction

Rehabilitation is a concept that aims at enabling persons with physical disabilities to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. In addition to this, rehabilitation contributes to patients' sense of autonomy, self-worth, and social participation. However, when patients' experiences are not adequately identified, patients receive less than optimal assistance. It is with this reason that client-centeredness emerged as an important principle for delivering health and rehabilitation services. Patients and their families need to be involved in providing ideals related to the services provided to them within the client-centeredness principle. The most common identified experiences reported in literature are, but not limited to: accessibility to rehabilitation services, interaction of service providers with their patients, involvement of patients and their families in their rehabilitation,

information/knowledge dissemination (Booth & Kendall, 2007; Martensson & Dahlin-Ivanoff, 2006 ; Leith, Phillips & Sample, 2004; Kroll & Neri, 2003; Neri & Kroll, 2003; Tod, Lacey & McNeil, 2002). In assisting persons with physical disabilities to achieve their functional independence, there is a need to plan and implement rehabilitation programmes and services that address their experienced problems/needs.

As aforementioned, accessibility to health/rehabilitation services amongst others is one of the different ways persons with physical disabilities have experienced as highlighted in literature (Booth & Kendall, 2007; Neri & Kroll, 2003; Tod, et al., 2002). Accessibility to rehabilitation is a key component, that successively meets the needs of PWDs when catering for a potentially large number of PWDs in a community. The United Nations approved rules recognise accessibility as a way that facilitates persons with disabilities to utilize any services available for them on an equal basis like people without disabilities.

Accessibility include; right of entry of physical environment, transportation, right to use information and communication and other facilities and services provided to the public both in urban and rural areas. Accessibility of services like rehabilitation has continually been a challenge to persons with physical disabilities (Booth & Kendall, 2007; Neri & Kroll, 2003; Tod et al., 2002). Once these patients with physical disabilities are discharged from any form of rehabilitation, they tend to lack information and access to community services. Patients have indicated that they are hindered to attend rehabilitation mainly due to difficulties in accessing means of transport (Booth & Kendall, 2007) and lack of information related to rehabilitation services. Barriers related to rehabilitation accessibility encountered by cardiac patients in South Yorkshire Coalfield include waiting for a long period for rehabilitation services due to limited service capacity (Tod et al., 2002). Patients with physical disabilities in the USA and the Netherlands encountered problems while accessing rehabilitation services, such as travelling long distances due to absence of these services within their vicinity (Booth & Kendall, 2007). In addition, inaccessibility to rehabilitation buildings/areas such as unavailability of lamps in facility areas or rooms, narrow doorways and cramped waiting and examination rooms is reported. In some cases, patients are able to access health services however they receive services which are of poor quality due to inadequate services. Information that relates to patients' condition and treatment is also another aspect that is crucial to patients however, unavailable to them.

Availability of information regarding rehabilitation and disability is one of the other greatest needs reported by patients (Martensson & Dahlin-Ivanoff, 2006). However, the availability of information to patients is less fulfilled in rehabilitation domain. The provision of disability information/knowledge in practice has been reported to improve on the health/rehabilitation professional practice, guidance and education. However, the lack of information among patients is reported (Darrah, Magil-Evans & Adkins, 2002; Tod et al., 2002; Kroll & Neri, 2003) and this is due to lack of more informed/educated health/rehabilitation professionals in disability related issues (Leith et al., 2004; Martensson & Dahlin-Ivanoff, 2004).

Different ways have been put forward in solving the dearth of information and these include: the implementation of programmes and central information centres that are accessible by patients and their families (Kroll & Neri, 2003; Darrah et al., 2002). Leith et al (2004) attributed the lack of information to limitated training skills among service providers. Which might also result to ineffectual attitudes on the service providers towards patients.

The ineffectual attitudes of service providers towards patients have been reported in this review (Tod et al., 2002), this also affects their relationship. Contrary, Darrah et al (2002) reported that patients and their families expressed that the service providers were caring and supportive across all service areas. Client-centeredness was one of the approaches recognised to improve the service provider's relationships with patients (Martensson & Dahlin-Ivanoff, 2004). Patients' experiences and knowledge are recognised by therapists like occupational therapists within the client-centeredness approach. The interaction and improvement of communication skills between patients with service providers within the client-centeredness approach is recognised (Martensson & Dahlin-Ivanoff, 2004).

Communication in rehabilitation service provision is one of the component in client-centeredness approach. With this approach both patients and service providers interact and share ideals, challenges and difficulties. Communication was reported to be inadequate between patients, families and their service providers (Darrah et al., 2002; Tod et al., 2002). This affected the patients, in a way that they were unable to get opportunities to share their needs and challenges encountered during rehabilitation. Seeking patients' perceptive in order to incorporate their views prior to planning and delivering of rehabilitation services is important. Therefore, the purpose of this systematic review is to highlight the different experiences of persons with physical disabilities regarding rehabilitation services as it relates to different studies.

Methods

Search strategy

A computer search was conducted on different databases at the University of the Western Cape (UWC) library. The following databases were searched; CINAHL, COCHRANE, EBSCOHOST, MEDLINE and SCIENCE DIRECT. MeSH and key terms used: persons with physical disabilities, clients'/patients' experiences, rehabilitation services and rehabilitation service delivery/provision.

The abstracts of the studies were assessed using the P: Problem, I: Intervention, C: Comparison with intervention and O:Outcomes of interest (PICO) system and Sackett's level of evidence hierarchy system.

The total sum score of PICO (4) and of the Sackett's level of evidence hierarchy system (5) with a full text accessed (1) provided the final score (10) of each abstract that was included in the current study. This process facilitated the refining of a researchable and answerable question hence finally having an effective search of the evidence. The abstracts which scored 5 and above out of 10 PICO and Sackett score were included in the study. The articles which scored 4 and less out of 10, and studies conducted in geriatrics, paediatrics and psychiatrics were excluded.

The present review is based on the information attained from peer reviewed published articles. The title and abstracts of the articles included in this study were screened by two independent reviewers.

Search results

Using the search terms, 847 hits were retrieved from the mentioned databases but, only 63 abstracts were retained. These articles were selected using the following criteria: article needed to be published in a science journal, not a geriatric, paediatric or psychiatric abstract, published between January 2000 and January 2010. The 63 abstracts were assessed using the PICO and the Sackett's level scores, 46 abstracts were excluded because they scored 4 and less out of 10. The remaining 17 articles were subjected to the methodological quality assessment.

Methodological quality assessment

The review was followed by grouping the selected articles following the nature of the methodology followed to conduct the study. The 17 selected articles were then grouped into 3 categories namely; Quasi-experimental (3 articles), qualitative (11 articles), and cross-sectional studies (3 articles). The Centre for Evidence-Based Social Services Critical Thinking Tools were used to score the Quasi-experimental and qualitative articles for the methodological quality. The score of these tools had a scale ranging from 1-13. The first two questions of the tools are screening questions which determine whether the reviewer would continue with the review. This assists the researcher/reviewer to determine if the article is worth to be included or excluded. If the screening questions are positive, the reviewer continues with the process. However, if the screening questions are negative, the trustworthiness of the study/article is questionable providing less chances of applying the findings of the study in practice or in making decisions of clients. Articles would be included in the study if they scored highly and moderately, 8-13/13 and 6-7/13 respectively. If the score was poor with 1-5/13, the article would be excluded. 6 qualitative articles out of the 11 were selected for this review. The 5 qualitative and all the 3 quasi-experimental articles were excluded as they had a poor score.

The Critical Appraisal Skills Programme tool namely; cohort was used to assess the cross-sectional studies. This tool has proved to enable researchers in developing skills that assists them in finding and making sense of the research evidence. The tool

comprises of 12 questions, but the first two questions are screening questions and these two questions assist the reviewer to find out the worthiness of continuing with the other 10 questions. The first two questions of this tool are used to screen the article and are not part of the overall scoring of the article. When using this tool, articles that scored 8-10/10 were viewed to have a high score, 5-7/10 a moderate score and 1-4/10 a poor score. The 3 cross-sectional studies were assessed and only 1 was retained as the others 2 scored too low. The final number of articles used in this review was 7; 6 qualitative and 1 cross-sectional study.

Results

The sample size of the participants included in this study ranged between 20-137. The different methods used to collect the data included; questionnaires and data gathering instruments for quantitative data. Semi-structured interviews, in-depth interviews and focus group discussions were utilised to gather the qualitative data. Referring to 7 studies included in this review related to the experiences of persons with physical disabilities, the cross-section study reported on the challenges patients encountered while interacting with their service providers (Darrah et el., 2002). While Martensson and Dahlin-Ivanoff (2006); Leith et al (2004); Kroll and Neri (2003) reported on how patients were less informed regarding disability and rehabilitation services. The other 3 qualitative studies meanwhile, reported on the challenges experienced by patients while accessing rehabilitation services/facilities (Neri & Kroll, 2007; Tod et al., 2002; Booth & Kendall, 2007).

In summary, as indicated in Table 1, the articles included in this review report that the participants who took part in the studies experienced challenges with regards to rehabilitation services. The table below summarises the description of the articles included in this study.

Table 1: Description of studies included in this study

Authors	Study design	Tools	Country	Population	Outcome measured	Result
Booth, S & Kendall, M. (2007)	Qualitative study	In-depth interviews.	Australia	40 individuals with Spinal Cord Injury who participated in the transitional rehabilitation. Ages not indicated.	Accessing rehabilitation services in the community (Transitional rehabilitation).	Provided inequitable services.
Darrah et al., (2002)	Quantitative study	Demographic and satisfaction questionnaire	Canada	88 participants, 49 adolescents (13-15 years) and 39 young adults (19-23) and their families. Ages not indicated	Interaction of service providers with patients and information/education related to disability	Communication difficulties were experienced in all service areas. Information was difficult to provide and receive.
Kroll, T & Neri, M.T. (2003)	Qualitative study	Semi-structured interviews	United States of America	30 people with cerebral palsy, multiple sclerosis or spinal cord injuries, 16 women and 14 men. With a mean age of 44.8 years.	Disability specific knowledge	Lack of disability specific knowledge and insufficient communication

Leith et al., (2004)	Qualitative study	Focus group discussions	United States of America	21 persons with Traumatic Brain Injury. Ages not indicated.	Information and education related to Traumatic Brain Injury and Traumatic Brain Injury services	Lack of information and education related to Traumatic Brain Injury and its services
Martensson, L & Dahlin-Ivanoff, S. (2006)	Qualitative study	Focus group discussions	Sweden	24 individuals with chronic pain with the mean age of 7.6 years.	Knowledge and information about disability	Participants needed to be more informed about disability and rehabilitation services available for them
Neri, M.T & Kroll, T. (2003)	Qualitative study	Semi-structured, in-depth interviews.	United States of America	30 participants with spinal cord injury, cerebral palsy or multiple sclerosis(ranged between 18-65 years)	Access to rehabilitation services	Inappropriate (delayed) services affected the participants accessibility.
Tod et al., (2002)	Qualitative study	Individual and group discussions.	United Kingdom	20 post-myocardial infarction patients, 4 women and 16 men (ranged between 43-76 years) and 15 staff.	Access to cardiac rehabilitation service and information regarding the availability of these services.	Limitation of services and capacity resulted in absence of cardiac rehabilitation services. Unavailability of information about available services for patients.

Discussion

This review explored and summarised the available literature relating to the experiences of persons with physical disabilities regarding the provision of rehabilitation services. The main areas focused on by the articles included in the review can be divided into three main sections: accessibility of rehabilitation services, interaction of service providers/health professionals with patients, and information and knowledge dissemination related to patients conditions and treatment. Each category is discussed in detail below.

Accessibility of services

For rehabilitation to be effective, it is reported that the accessibility of rehabilitation services is important. However, inaccessibility of rehabilitation/health services have been reported in the studies included in this review (Tod et al., 2002; Neri & Kroll, 2003; Booth & Kendall, 2007). Tod et al (2002) reported that patients in South Yorkshire Coalfield in the United Kingdom experienced challenges when accessing rehabilitation services. These challenges included delayed and limited services which prevented the provision of appropriate services. In some instances, the rehabilitation personnel are prevented from offering accessible and appropriate range of services due to limited resources (Tod et al., 2002). Another problem that might cause inaccessibility of rehabilitation services is related to lack of funding of services and service providers that lead to inequitable service provision (Booth & Kendall, 2007).

The following is recommended by different studies in addressing the inaccessibility of services, seeking patients' perceptions is one of the approaches of monitoring the quality of services amongst others.

Neri and Kroll (2003), suggested the implementation of appropriate and timely access services was a solution to embark on the problems that patients encounter while accessing rehabilitation services in the USA. This was recommended due to the fact that patients encountered challenges of long waiting lists due to a deluge number of persons with disabilities needing services which do not correspond to the service providers' capacity. Due to the deluge number of patients needing to be attended too, service providers have difficulties in sparing time to educate patients on their disabilities and rehabilitation.

Provision of information

The provision of information by service providers needed by patients is among the needs identified by patients in different studies (Martensson & Dahlin-Ivanoff, 2006; Tod et al., 2002), however, it is the least fulfilled need in rehabilitation. The information needed by patients relates to the nature of their conditions and treatment, available health/rehabilitation and supportive services available for them. The lack of information provision among persons with physical disabilities might impact on their rehabilitation outcomes. A study by Darrah et al (2002) which evaluated the perceptions of cerebral palsy patients and their families regarding service delivery, reported that the information regarding the services available for them was only disseminated through different networks. While the families and patients which were not belonging to any network missed out the information because they didn't know the existence of these networks and lacked access. Information related to patients' disability was also not provided to them and their families.

Ways of disseminating information that can be accessed by all patients and their families is reported (Darrah et al., 2002; Kroll & Neri, 2003). These include but not limited to: a central information centre in the patients community that provides updated and accurate information that is accessible to all patients and their families (Darrah et al., 2002). The implementation of programmes that provide patients with all the information they need in their vicinity, in order for them to access the information they need that is not provided by service providers during their rehabilitation is also recommended (Kroll & Neri, 2003). Leith et al (2004) reported that service providers are not adequately skilled enough to provide the necessary information needed by the patients regarding rehabilitation services and their disability.

There is a need to provide training to health and rehabilitation professionals to improve on their knowledge and skills at their workplaces (Neri & Kroll, 2003; Leith et al., 2004; Martensson & Dahlin-Ivanoff, 2006) in order to educate patients. The time for service providers is more dedicated to the workload and invest less time to provide patients with the necessary information (Martensson & Dahlin-Ivanoff, 2006). In some instances, service providers feel disrupted from their activities when they have to invest time to talk and interact with patients.

Interaction of service providers with patients

Rehabilitation is observed to be essential in the lives of persons with physical disabilities, and their interaction with their service providers plays a big role in improving their quality of life. When interacting with service providers, patients are able to communicate, share and express their ideals, challenges and needs to them (Martensson & Dahlin-Ivanoff, 2006). Through the interaction of service providers with patients, the treatment goals, interactional difficulties and challenges are presented and strategies of dealing with these challenges are sought. However, if there is lack of communication, patients feel ignored (Darrah et al., 2002), ill treated and rejected (Martensson & Dahlin-Ivanoff, 2006). In a study conducted in Canada, patients and their families encountered communication difficulties because service providers used complex terminologies while talking to patients (Darrah et al., 2002).

In a study conducted in the UK, Tod et al (2002) reported that patients encountered language barriers while communicating to service providers. Patients who were unable to express themselves in English encountered difficulties in communicating to their service providers. Studies have reported that poor/lack of communication might be due to personnel inadequacy, increased workload, hence service providers concentrate/focus only on treating patients (Kroll & Neri, 2003). Client-centeredness is recommended as a method of improving the interaction of service providers with patients during

rehabilitation. Client-centeredness allows decision-making between patients and service providers during rehabilitation and patients are able to express their ideals and needs regarding rehabilitation and their conditions.

Conclusion

The experiences of persons with physical disabilities regarding rehabilitation services has been investigated in terms of accessibility of these services, provision of information and interaction of service providers with patients. 3 studies which reported on accessibility revealed that patients experienced inaccessible rehabilitation services due to limited resources. The other 3 which reported on provision of information and knowledge regarding patients' disability and rehabilitation indicated the need for health and rehabilitation professionals to provide patients with appropriate information that is also easily available for them. As well as one article which reported the lack of interaction between patients and the service providers. Recommendation for improvement are also indicated in this review. To address these challenges, the reorganization of rehabilitation services would improve or maintain the quality of services rendered to patients. Not all the problems raised by the patients can immediately be addressed, but expressing their views of rehabilitation service provision assists on improving the quality of services. The review concludes that, rehabilitation services need to be accorded more attention to address challenges experienced by patients.

Implications for practice

Rehabilitation challenges identified can be solved when there is a considerable investment to address the mentioned challenges by policy makers and rehabilitation management. Health professionals as well as physiotherapists need to understand the need of interacting with their patients, allowing patients to express their needs and challenges. The review indicates the need of training among rehabilitation professionals in order to improve their practice skills on disability related issues. This can be achieved by the management of rehabilitation sectors supporting continued education and providing time for service providers to attend workshops, seminars and any other employees' online workshops and seminars. It is through the dissemination of information that patients can access information about the services available for them. Researchers in this domain need to conduct studies in Africa and not all in the developed countries.

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Sexual behaviour of some secondary school students in Benin City, Nigeria

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Abstract: One perennial issue that most Nigerian parents hardly discuss with their children is sex; it is seen as a taboo subject. However, it is something which children have to face the realities of now or later as adults. Denial of such vital information in the home leads many children to obtaining it from their peers, books, the internet or other sources and very often the information may be faulty. The consequence is that adolescents develop a plethora of behaviour which may be inimical to proper socialization. This study was designed to explore sexual behaviour of adolescents. It used a survey design. The population of the study comprised all senior secondary school students in Benin City. A sample of 600 students was drawn from twenty secondary schools. The instrument used was a questionnaire that attempts to measure sexual behaviour on a three-point scale with categories: very frequently, sometimes and not at all. It was constructed based on responses from a focused group discussion with some adolescents. The information collected was analysed through the use of an interpretative norm expressed as a mean. The results should a preponderance of non-verbal behaviours. Based on the results, it was suggested that parents should play a more prominent role in regulating sexual behavior of adolescents. In this way adolescents are made aware of skills that can be helpful in developing and regulating sexual behaviours. Consequently, adolescents would imbibe behaviours which would reduce their vulnerability to unguided sexual behavior outcomes.

Keywords: sexual behaviour, adolescents, students, gender differences

Introduction

The issues surrounding sex are hardly those of discourse between parents and children in Nigeria. Nonetheless sexual behavior is an important aspect of the socialization process as it plays an important role in societal regeneration. Thus adolescents in an effort to understand what is involved in it rely on the media, peer group and internet for information. Human growth and development subsumes biological and social maturity. While growth involves an increase in size, development connotes an increase in functional ability. The end point of maturity is one's ability to procreate and depends to a large extent on biological maturity which is not episodic but gradual. The changes noticed create considerable confusion for the adolescents as parents are not forthcoming in discussing behaviours with sexual overtone. Thus what constitutes appropriate sexual behavior during adolescence is mystified and not understood (Odu & Akanle, 2008).

Sexual behavior among adolescents may be seen as a precursor of sexual interaction or practices. The interaction is reflected in dating, which consequently lead to sexual intimacy. As indicated by Abraham & Kumar (1999) and Insel & Roth (1999) this is usually expressed through petting and necking which may involve kissing, caressing and stimulating the breasts and the genitals. These behaviours could eventually lead to getting involved in actual sexual relationships. The behaviour exhibited to a great extent can be traced to the effect of the media which in most cases can be very provocative, and the peer group that encourages experimentation with what the media has idolized. Equally appreciated as having an effect on adolescents sexual behaviour is

family and parental education. In particular parent-child communication has been found to have a significant role to play here (Meschke, Bartholomae & Zental, 2000; Miller, 1998).

Other factors internal to the child have equally been used to explain sexuality. Theory of sexuality as a social construct has been most apt in this direction. This theory, according to Larsson (2000), posits that the social system and the economic, religious, and medical as well as the cultural spheres determine the position held and the nature of sexuality. Viewed from a constructivist point of view, sexuality is a relational and contextual concept, in which social processes are assumed to control as well as construct sexuality (Gagnon and Simon, 1973; Weeks, 1981, 1985). In this view, each society constructs and shapes its own suitable conception of sexuality (Vance, 1991). The sexuality of girls and boys develop on this basis in interplay with their surrounding, in accordance with society's expectations and assumptions. Adolescents are a part of the society in which they grow up and thus internalize its norms and values concerning sexual behavior. What is termed healthy and natural sexuality is thus formed from the society one lives in and equally depends on gender as constructed. Thus sexuality is derived from the functions of the physical body but gains meaning for the child through interplay with the surroundings, and hence the child is able to determine its own identity and consequently sexuality. Thought processes (Masters and Johnson, 1979) and sexual scripts (Achebe, 1988) influence sexual behavior and how one views and acts towards an event. Odu and Akanle (2008) in their study of sexual behaviour of youths in Nigeria showed them to be sexually very active. Though their study was conducted in Nigeria this study is different as it focuses on behaviours that can lead to actual engagement in sexual activity.

Sexual behaviour as used here involves body touching such as exploring one's own body and that of others, sexual language, and other interactions which can have sexual connotations. It is used in a restrictive sense and it is different from sexual practice which people engage in for pleasure, for reproduction and even to promote or strengthen a bond of relationship. The attitude towards sexuality may be negative, positive, possibly reluctant or embarrassed but never entirely indifferent. The expressions of sexual desire, curiosity and behaviour in adolescents have aroused many feelings in adults; most importantly adults feel that they would be promiscuous in later years and thus get exposed to dangers which can lead to self extinction. This is because their sexual experience is often gained in an unplanned or secretive fashion, under circumstances that make them vulnerable to coercion, sexuality transmitted infections and unwanted pregnancy.

The consequences of their decision in this regard can be far-reaching. These include transmission of HIV/AIDS and other STIs, unwanted pregnancy which may be occasioned by poor negotiating skills, lack of education and also poor knowledge of contraception(Jejeebhoy, 2000; Mehra, Savithr & Coutinho,2009). As succinctly presented by Mamta (n.d.), the consequences of an adolescents' pregnancy are difficult to comprehend even at this age as some may end up with clandestine abortions leading to enhanced morbidity. Furthermore, young adolescent mothers are far more likely to drop out of school or vocational training compared to their childless counterparts. In addition young adolescent fathers may not continue with their education because of the need to look for a means to support their family; immediate employment definitely is the next option. Because adolescents are not yet mature, they may be overcome with feelings of guilt, shame and low self-esteem. These feelings can be compounded by the reaction of elders and hence further affect the adolescents' long-term personality and ability to form long lasting relationships (Mamta, n.d.).

Based on this situation, it becomes necessary to understand the sexual behaviour so as to be able to assist adolescents early in life to face challenges associated with sexual behavior that may eventually occasion sexual practices that can have a detrimental effect. Consequently, this study mapped out the sexual behaviour of adolescents in secondary schools in Benin City. The aim is to identify the predominant sexual behaviours as well as categorise them for purposes of recommending actions to aid practice.

Methodology

This study investigated the prevailing sexual behavior of adolescents in secondary schools. As a result a survey research approach was adopted. It involved the selection of twenty secondary schools within Benin metropolis. From each school a random sample of senior school class two (SS2) was

selected. From each class thirty students were selected for use in the study.

A questionnaire was used for the collection of data. A draft of the questionnaire was constructed on the basis of the outcome of a focus group discussion with ten SS2 students. This questionnaire was presented to three experts knowledgeable in instrument development for critique and establishment of the content validity-evidence. Based on the comments a modified version was generated. This was administered on a sample of 30 SS2 students for purposes of determining the reliability of scores from the questionnaire. The reliability coefficient using Cronbach alpha was 0.87 and ambiguities were not noticed in its administration.

The questionnaire was administered with the assistance of teachers in the schools visited. The responses were transformed into numeric values as follows: Often=3, Sometimes=2 and Not at all=1.The information generated was analysed using frequencies, means and directional agreement among male and female respondents. Based on the means the 10 items with the largest means but with a value not less than 1.51 were selected as indicative of predominant behaviours. The value of 1.51 was selected as this value was higher than the real upper limit of the category 'not at all'. Though all predominant behaviours are of interest, the focus in this study is to identify the ten most predominant ones; this was done for all subjects pooled together and respondents in the different categories examined. Thus the predominant behaviours are those items ten items with highest mean values which equally have means values greater than 1.51.

The ethical considerations involved giving an assurance to the respondents that the responses would be treated with strict confidentiality; the responses would equally not be accessible to any third party. In addition the respondents were informed that the responses were not to be used in any harmful way against them. Thus the respondents were able to take an informed decision to participate as there was no coercion.

Results

Out of the six hundred questionnaires administered five hundred and five useable questionnaires yielding a return rate of 81.2% were obtained. Table 1 contains the demographic characteristics of the respondents. There were more female respondents than males and a majority of the respondents were aged 15 – 19 years. Christianity was professed by almost all the respondents and more than three-quarter attended public schools.

Table 1: Demographic characteristics of the respondents

Characteristic	Frequency	Percentage
Gender		
Male	203	40.4
Female	302	59.6
Total	**505**	**100**
Age		
12 – 14 years	32	6.4
15 – 19 years	468	93.6
Total*	**500**	**100**
Religion		
Christian	475	94.1
Muslim	23	4.5
Others	7	1.4
Total	**505**	**100**
Ownership of School		
Private	107	21.4
Public	304	78.6
Total*	**501**	**100**

*Shortfall due to no response

From table 2 it is noticed that all the means were greater than 1.51 which implies that the behaviors can be classified within the category of sometimes.

Table 2: Frequency distribution and means of behaviour items (N=505)

Behaviour	Often	Sometimes	Not at all	Mean	Decision
Winking of eyes.	102	224	178	1.85	Predominant
Sending love texts.	68	186	251	1.64	NP
Engaging in secret discussion.	77	160	268	1.62	NP
Engaging in some suggestive play.	67	122	314	1.51	NP
Writing love letters.	72	140	293	1.56	NP
Exchanging gift with the opposite sex.	75	179	251	1.65	NP
Giving dates e.g. appointment, hanging out.	73	172	260	1.63	NP
Being too conscious of oneself in an extraordinary manner.	104	221	178	1.85	Predominant
Seeking attention of the person you like.	129	234	141	1.98	Predominant
Touching opposite sex.	92	196	216	1.75	Predominant
Sending non verbal message through hand shake.	92	187	224	1.74	Predominant
Talking shy to a particular person.	125	215	164	1.92	Predominant
Answering call in a hidden manner e.g. in low tone.	108	204	193	1.83	Predominant
Sitting down and deliberately opening legs.	86	150	269	1.64	NP
Wearing transparent clothes.	74	156	272	1.61	NP
Wearing dresses that expose the body.	79	135	290	1.58	NP
Becoming excessively neat to catch the attention of the opposite sex.	89	189	227	1.73	NP
Asking friends and the elderly ones questions about opposite sex directly or indirectly.	116	218	171	1.89	Predominant
Changing steps in walking to impress the opposite sex.	84	189	231	1.71	NP
Body and eye contact movement while speaking.	110	195	200	1.82	Predominant
Value personal independence.	158	222	125	2.07	Predominant
Fantasizing about the opposite sex.	81	196	81	1.71	NP
Peeping uninvited into strangers' homes.	67	122	315	1.51	NP

NP= Not predominant

When the normative rule of selecting the ten items with the highest means, each greater than 1.51 is applied then the predominant behavior are: 'winking of eyes', 'being too conscious of oneself in an extraordinary manner', 'Seeking attention of the person you like', 'touching opposite sex', 'Sending non verbal message through hand shake', 'talking shy to a particular person', and 'answering call in a hidden manner e.g. in low tone'. Others are 'asking friends and the elderly ones questions about opposite sex directly or indirectly', 'Body and eye contact movement even while speaking' and 'value personal independence'.

The predominant behaviours are mainly direct and indirect. The object towards which one displays the behavior may notice it or it could be through an intermediary. For example talking in a low tone is indicative that the adolescent is aware that what is being done is not expected or wants only the person being related with to be aware of it and nobody else. All in all the behaviours can be categorized into verbal and non-verbal. It would seem that from the responses of these adolescents that the non-verbal behaviours seem to be most common.

In table 3, the decision to select an item as predominant is guided by rank ordering the mean values greater than 1.51 and picking the ten items with highest mean values. In the case of male adolescents, the mean values for the ten items range between 1.95 and 2.16; while that of female adolescents range between 1.66 and 1.97. Thus items predominant for females may not be for males. An examination of the means equally show that all the behaviours were generally more predominant for males

Table 3: Means and predominance of behaviours by gender

Behaviour	Males	Decision	Females	Decision
Winking of eyes.	1.85	NP	1.85	Predominant
Sending love texts.	1.87	NP	1.48	NP
Engaging in secret discussion.	1.81	NP	1.49	NP
Engaging in some suggestive play.	1.79	NP	1.32	NP
Writing love letters.	1.83	NP	1.38	NP
Exchanging gift with the opposite sex.	1.86	NP	1.51	NP
Giving dates e.g. appointment, hanging out.	1.85	NP	1.48	NP
Being too conscious of oneself in an extraordinary manner.	1.95	Predominant	1.79	Predominant
Seeking attention of the person you like.	2.16	Predominant	1.85	Predominant
Touching opposite sex.	1.96	Predominant	1.62	NP
Sending non verbal message through hand shake.	1.84	NP	1.68	Predominant
Talking shy to a particular person.	2.03	Predominant	1.89	Predominant
Answering call in a hidden manner e.g. in low tone.	1.97	Predominant	1.75	Predominant
Sitting down and deliberately opening legs.	1.99	NP	1.49	NP
Wearing transparent clothes.	1.79	NP	1.50	NP
Wearing dresses that expose the body.	1.78	NP	1.45	NP

Becoming excessively neat to catch the attention of the opposite sex.	1.98	Predominant	1.66	Predominant
Asking friends and the elderly ones questions about opposite sex directly or indirectly.	1.98	Predominant	1.84	Predominant
Changing steps in walking to impress the opposite sex.	1.88	NP	1.60	NP
Body and eye contact movement while speaking.	2.11	Predominant	1.69	Predominant
Value personal independence.	2.21	Predominant	1.97	Predominant
Fantasizing about the opposite sex.	1.89	NP	1.59	NP
Peeping uninvited into strangers' homes.	1.69	NP	1.39	NP

NP= Not predominant

adolescents than the females. The behaviours which are predominant that there was a consensus among male and female adolescents were 'being too conscious of oneself in an extraordinary manner', 'seeking attention of the person one likes' and 'talking shy to a particular person'. Others are 'answering call in a hidden manner e.g. in low tone', 'becoming excessively neat to catch the attention of the opposite sex', 'asking friends and the elderly ones questions about a person of the opposite sex directly or indirectly' and 'valuing personal independence'.

For the female adolescents, 'touching opposite sex', 'body and eye movement', and 'sitting down and deliberately opening legs' are also predominant. For the males other predominant behaviours are 'changing steps in walking to impress the opposite sex', 'Sending non verbal message through hand shake', and 'winking of eyes'. From these results one can conclude that some of the behaviours exhibited by the group of adolescents is dependent on gender.

Females, considering the mean scores less than 1.51, are not much into 'sending love texts', 'Engaging in secret discussion', 'engaging in some suggestive play', 'writing love letters', 'Giving dates e.g. appointment', 'hanging out', 'sitting down and deliberately opening legs', 'wearing transparent clothes', 'wearing dresses that expose the body' and 'Peeping uninvited into strangers' homes'.

Discussion

The results from this study show a preponderance of both direct and indirect behaviours. Adolescents are aware of parental non-approval of sex-related behavior because of the general disapproval of discussions related to sexual matters. It is no wonder that behaviours found to be predominant included 'talking in a low tone' and even 'dressing to attract attention'. Generally, people are attracted towards objects which glitter and therefore dressing neatly can serve to 'attract the butterfly to the nectar'. All in all the behaviours can be categorized into verbal and non-verbal. The non-verbal behaviours seem to be predominant thus being in tandem with results obtained by Odu and Akanle (2008). This situation could be related to sexual scripts that the adolescents may have internalized from other sources as parents may not have provided sexuality education. In addition parent-children communication may not have been well facilitated and therefore adolescents have to explore behaviours on experimental basis.

The variation in predominant sexual behavior of male and female adolescents is not unexpected as they generally have different socialization exposure. Bhende(1994) indicated that females are more closely watched that sexual activity is impossible. This not withstanding opportunity provided on the way to school and on play grounds are enough to get information about sexuality particularly behaviour for which they may not know the consequences. Sexuality education as part of the school curriculum should provide dependable source of information. It is doubtful if this is properly implemented and hence adolescents still have to rely on other sources for sexual information. Experience shows that males are more gregarious and tend to be less risk averse.

Consequently, they would display more sexual behavior as obtained from large mean values in this study.

Sexuality has been affirmed here based on the responses provided by the sample used for this study. As noted by Wellings, Collubien, Slaymaker, Singh, Patel and Bajos (2006) this fact needs to be fully imbibed for public health messages are to be heeded. We should not close our eyes and believe that adolescents' behaviours do not matter. The fact that girls did not have to expose their bodies seems to be in agreement with societal expectations in Nigeria. This result is in line with the results obtained by Mehra, Savithri & Coutinho (2009) who indicated that girls are expected to dress decently without exposing their bodies.

Conclusion and Recommendation

Within the limitations of this study it can be concluded that the adolescents in Benin City display behaviours which could eventuate in actual sexual activities. These behaviours are both verbal and non-verbal with the verbal not being directly related to the object of interest but from others who may have a relationship with the person. When it is however direct the message is usually clouded and not clearly exposed; that is the information is to be decoded by those it is directed at. The non-verbal communications are directed at the object person. The behaviours are contingent on gender and their intensity is more pronounced for males than females.

As a result of these findings we need to encourage the acquisition of life skills integrated into sex education. Things to be included should be about negotiation, assertion and listening, identification of pressure and being able to resist such pressure. Parents should be assisted to sharpen their parenting skills to include counseling. With such preparation students and adolescents can be assisted to make well informed and voluntary decisions to face issues in the sexuality terrain.

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