

# **Disabling lifestyles: continuum *societatem sui sanitatem***

## **Inaugural Lecture**

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### **1 Salutation**

The Campus Rector, Vice-Rector (Teaching, Learning and Quality Assurance), Vice-Rector (Research and Planning), Campus Registrar & Other Principal Officers, Dean of FAST & Deans of Other Faculties, distinguished Fellow Professors, Members of Campus Senate, Khosi, your Excellences, Academic & Non-Academic Colleagues, dear students distinguished Guests Ladies & Gentlemen.

### **2 Preamble**

I am most delighted to stand before you on this occasion to deliver my Inaugural Address in recognition of my promotion to the rank of a full professor of Physiotherapy in 2013 by the North West University, South Africa. It is an opportunity for me to tell my academic story and share my path of scholarship. I am most grateful to Almighty God for life, intellect and wisdom to contribute to humanity. I am also grateful to my parents, for their nurturing in my infancy and training. To my loving wife for your prayers, caring, respect and being the bond that holds us all together. My friends and colleagues deserve a special mention in moulding me in academia. My teachers, I hope you will remain proud of me after today's lecture as a testimony of the impact you made in me. My students, I will ever remain grateful as one of the porters in your lives. And my patients, I hope my healing hands and the gift of healing made the difference when and where it mattered most. Madam Rector, I sincerely appreciate the opportunity that you have granted me to serve this University.

### **3 Who is a Disabled person?**

Madam Rector, this is not a trick question. I will reflect on my doctoral work in an attempt to define the disabled person. Disability has been medicalised over the years.<sup>1</sup> In most developing world, the society disables individual and not diseases. As we begin to grow old we will observe that normality begins to change. Those things that we used to be able to do before (For example bending to pick objects from the floor) will now require a bit of effort and energy. Is the disabled person protected by our laws? The answer is yes! Everyone

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<sup>1</sup> Medicalisation of disability Excerpt from doctoral thesis.

According to Oliver (1990), the dominant way of thinking about disabled people is related to the functional limitations paradigm, which asserts that the most significant difficulty with disability is the loss of physical or occupational capability. This perspective argues that the disability resides with the individual, that it is reducible to the nature of the impairment and is treatable in the same way that a doctor would attempt to cure a patient's disease. Several studies highlight the medicalisation of disability as a significant factor in society's marginal treatment of disability issues. This author noted that the 1980 edition of the World Health Organization (WHO) ICIDH classification clings to the medical classification of disability which sees a disabled state as a form of disease and/or abnormality. Indeed, its definitional basis tends to take the concept of 'normality' for granted in defining disability as not being able to perform an activity considered normal for a human being.

The social impact of the medicalisation of disability according to INDS (1997:5) are; Early separation of children from family; Barriers to participation within the built environment; Alienating people with disabilities from mainstream services; In-accessibility of information systems.

including the disabled is protected by the supreme law of the land-The 1996 constitution of the Republic of South Africa.<sup>2</sup>

Madam Rector, permit me to make reference to a few sections of our constitution that speaks to the role of the society in the healing and caring continuum.

**Section 3 (2:a)** clearly states that all citizens are equally entitled to the **rights, privileges and benefits** of citizenship. These right include the rights: to equality,(section 9); dignity (10) and life (11), and health care.

***This is further re-emphasised under the equality clause of section 9 clearly states as follows:***

“(1) **Everyone**, is equal before the law and has the right to equal protection and benefit of the law.

(3) **The state** (*societatem*) may not unfairly discriminate directly or indirectly **against anyone** on one (*sui*) or more grounds, including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, **disability**, religion, conscience, belief, culture, language and birth.

***The right to self-determination as stipulated by the Constitution:***

**Section 12(2):** the **right to bodily and psychological integrity**, which includes the right: (b) to security in and **control over their body**; and (c) not to be subjected to medical or scientific experiments without their informed consent.

**Section 24 (Environment):** the right—(a) to an environment that is not harmful to their health or wellbeing.

**Section 26 (1) (Housing):** the right to have access to adequate housing.

**Section 27 (Health care) (1):** the right to have access to (a) health care services, (*sanitatem*) Including, if they are unable to support themselves and their dependants, appropriate social assistance.

**Section 29: (Education)** the right—(a) to a basic education, including adult basic education; There is tremendous progress on de-institutionalisation of persons with disability in South Africa?<sup>3</sup>

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<sup>2</sup> Constitution of the Republic of South Africa, Act 108 of 1996

<sup>3</sup> Education and disability

Different perceptions of inclusive education have been documented (Duhaney & Salend, 2000: 21; Palmer et al. 2001:481). In accordance with the international trend of providing quality education for all learners within the mainstream of education, South Africa has set a firm foot on the road towards realizing this goal. The various international policy documents disseminated during the 1990s place considerable emphasis on the rights of all children and young people to have equal access to education. In spite of all the laudable policies, however, the operationalisation of inclusive education is hampered by many problems. Some of the problems amongst many, are that parents and community groups are not making adequate and responsible contributions to the process of inclusive education, especially in developing countries and marginalized and excluded voices are not heard (Prinsloo, 2001:344-5). According to Prinsloo, various special educational needs have been identified. These needs result in barriers to successful learning.

In 1994, South Africa held her first democratic elections, officially ending the apartheid era. The recently introduced National Education Policy report proposed five goals for education which includes a non-discrimination democratic process and governance, development of a unitary system, establishment of equity and effecting redress. Inclusion is seen within the paradigm of democracy, human rights and social justice (Van Rooyen, et al. 2004: 5-7). These authors further stressed that inclusiveness is inextricably tied to

#### 4 The role of Physiotherapy in Disability management?

Physiotherapy (often abbreviated to PT) (also known as Movement Scientist in some countries) is a profession that remediates impairments and promotes mobility, function, and quality of life through examination, diagnosis, prognosis, and physical intervention (therapy using Physical agents, mechanical force, adaptive devices, and movements). It is carried out by physical therapists (known as physiotherapists in most countries). Physiotherapy has embraced the World Health Organisation's concepts of International Classification of Function (ICF) in caring for persons with impairment or diseases. There is move from only medicalisation of the disabled towards holistic care that includes the society.

Madam Rector, my job in the past 32 years as the one who remediates impairments, promotes mobility, function and quality of life has been made easier through my training and disciplines in physiology of exercise and the sociology of health and illness. This has created a mix or puree of flavours resulting in *inter-professionalism*<sup>4</sup> as against *multi-professionalism*<sup>5</sup> of a combination of science in dealing with chronic illnesses in health care.

Chronic illness and doctor-patient relationships were strongly influenced by interactionist perspectives, emphasising the contingencies surrounding diagnosis, treatment and everyday

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discourse about democracy, which privilege the notion of participation, through which it is assumed inclusiveness will be achieved in ways that are considered to be appropriate. Inclusion was also discussed as participatory democracy describing the development of and commitment to democratic values of liberty, equality and civil rights within the paradigm of human rights linked to other minority issues as the only ethical path in the society. According to Praisner (2003:135), inclusive schools provide general education, do not relinquish responsibility for students with special needs, but instead work cooperatively with special education to provide quality programmes for all students. Eloff et al. (2002:83), citing Dyson (2001), indicates that inclusive education is a seemingly uncomplicated term that is often wrongly used. And there is in fact no commonly accepted notion of inclusion. He identifies inclusion as placement, as education for all, as participation and social inclusion. The new constitution of the Republic of South Africa promotes the achievement of equality in all spheres of life, human dignity, legislative and other measures designed to protect or advance persons or categories of persons disadvantaged by unfair discrimination (Republic of South Africa (RSA) Constitution, Act 108 of 1996).

Some conflicts on inclusive education is documented by Farrell (2000:154-57), who says that the conflict within inclusive education is related to the following:

- i) That there might be times when a child's right to a good education and to have individual needs met might be better in special school;
- ii) That parent choice for special education for security and specialised attention they perceive it offers over inclusion exists;
- iii) That the inclusive education protecting the rights of the parents, child or schools or other learners;
- iv) That there are benefits of social inclusion over academic skills.

Anderson et al. (2003) documents comments from parents regarding attempts to place their wards with a disability in a mainstream school in Orange farm, South Africa. The comments included the following: refusal of school to admit child with disability; problem with transportation of child; child could not find his/her way back from school; the child needed special attention and could not be provided for by the school because of limited human and material resources. In a study on albinism in a rural area in Limpopo Province of South Africa, Gaigher et al. (2002: 5-10) mention that informed parents, teachers and health officials could help children to explore new and positive ways of responding to teasing, rejection and other forms of discrimination. They also reiterated that special schools, dealing with children with albinism, should have the necessary facilities and specially trained teachers, to deal with both the physical and psychological effects of albinism. This would, to a large extent, enhance inclusiveness. According to Kromberg et al. (1987:915), shame is also a reason for keeping children with physical disabilities away from the public.

<sup>4</sup> Working together for a common purpose, where only one the end product is the identity. The common ground effect.

<sup>5</sup> Where despite an attempt is made at working together, this is done in silos, and the individuals are still identified in the finished product. Multiple grounds effect.

actions in living with a disorder. Research in health inequalities was preoccupied with factors that might predispose or play a causal role in disease occurrence.

My interest in chronic illness is focused on prevention and effective management of situations of those already living with health problems and how their long term experiences will be shaped by socio-cultural actions- both of self and others in the face of impairments. Persons suffering from the disruptions that chronic illness brings find themselves creating a number of different responses.<sup>6</sup> In the healing continuum, disruptive lives may be repaired or at least mitigated to meet social and cultural demands. There however, still exist a gap in understanding the role of diverse cultures in dealing with impairment and mitigating activity limitations (DIS-ABILITY) resulting thereof. Sometimes the traditional empathic *care* provided by our family, friends and spouses could be disabling; the limited understanding of the atrophic effect of static as against *dynamic* bed rest are just a few examples. Hence my interest in working on the disabling impact of self and society.

Madam Rector, in addition to my disciplines in health, I sought to find a common ground and understand my present terrain of higher education with special focus and emphasis on teaching, learning and research. To do this effectively, I had to acquire relevant training and qualifications in the Education and a Fellowship in the Higher Education Academy, United Kingdom and membership of the Society of Research Administrators of the United States of America.

## **5 Myself as the object of study**

Why the topic “Disabling lifestyle: the self and society nexus (*continuum societatem sui sanitatem*)”? What is the link between self and society in the healing continuum?

Madam Campus Rector, please permit me to share my personal experience on this continuum of care.

Few years ago (1984), I suffered from the disabling effect of a sedentary lifestyle. Then, I had a lot of time on my hands to sleep, eat and just relax. Although my place of work was just a few meters from my residence, I still enjoyed the pleasurable ride every day to and from the clinic where I worked. I was not involved in any form of strenuous exercises or physical activities. I did not jog nor exercise myself in any way. I ate and drank what I liked. The result was that I became obese for my age height and sex. At that time I was only 74 kilograms. It became increasingly difficult for me to pick up objects from the floor because I was beginning to develop a flabby abdominal muscle; what most of us would refer to as a pot belly. From my back view: a new me evolved with fatty buttocks. I could no longer wear jeans trousers. This pushed me into making new trousers with waist line measurements of 82.5 cm (33 inches) instead of 70 cm (28 inches). My shirts shirt size increased from 38 cm to 42. My experience was published in 1990.<sup>7</sup> For me, round was the way I looked. But to my friends, I was living fine and comfortable, enjoying my life with little or no problems.

My blood pressure was higher that what was regarded as the norm for my age and gender. My resting heart rate was 78 beats per minute, six more than the biological norm. I was preparing an unhealthy foundation for other Non-Communicable diseases such as hypertension, Diabetes Mellitus, Obesity, Increased Cholesterol etc. The disabling effect of my newly acquired structure included hypo-kinesis, breathlessness, reduced exercise tolerance, increased work of breathing and unsolicited pain in my low back and sacro-iliac joints.

The last straw that broke the Carmel's back (my back really) was that my inner thighs started rubbing against each other, causing blisters and sores. Climbing stairs became increasingly difficult. I suffered from occasional knee pains coupled with back aches. At this point, I knew

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<sup>6</sup> Bury M and Gabe J 2004. The sociology of health and illness. Routledge: New York.

<sup>7</sup> Useh U 1990. Living Fit: an exercise and dietary guide for men and women.

I had to watch it. I needed no one to tell me that I was in trouble with my present weight. Watching it; meant cutting down the size and portion of my meals and reducing my intake of food rich in fats and sweets and including exercising in my programme.

It was not easy making up my mind on a programme despite my being a physiotherapist. I needed a lot of discipline and determination. If you have found yourself in a similar situation you agree with me! The axiom of no pain no gain is a reality and sometimes frightening! When I finally made up my mind, my first outing was a 400 meter walk-jog. I must confess that I walked more than half the distance. I couldn't do any sit-ups at that stage. I felt my muscles were going to tear apart and my heart was going to burst through my chest. I stopped when I knew I was really tired. The first night after my first exercise day, I slept as if I was on a sedative because of general body fatigue. The following morning, I almost refused to continue because of aches and pains all over my body. However, I was determined to continue on the programme. So I did not give up, I had adjusted at the end of the first week.

At two months, I had lost a few kilogrammes and could now run round the football field for a few more times with not so much effort. I felt lighter, agile, and more flexible. I had lost to gain! I had to maintain this lifestyle, because renegeing on my effort meant losing all I had gained. Today, each time I gained some weight, my wife's concern is the one I gain around my abdomen. I am not sure why? Scientifically though, there is a high correlation between abdominal adiposity and cholesterol<sup>8</sup>.

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<sup>8</sup> Glenn TM, Mulcare JA (2002). Principles of aerobic exercises. In Kisner C and Colby LA (2002): Therapeutic exercise: foundation and Techniques (Ed) Philadelphia: FA Davis

## 6 Consequences of diseases

An understanding of the consequences of disease and its implication on the social life of an individual presupposes above all, a theoretical framework, which defines the relationship between the sick individual and society<sup>9</sup>. How and what we eat and do with our body's plays a vital role on the type of illnesses that we suffer from. As societies modernize, and more people reach middle age and old age, the proportion of the population suffering from chronic non-communicable disease or long-term illnesses increases. While medicine is able to treat more of these conditions, such as heart disease and arthritis, it cannot cure most of them and thus living with illness becomes a way of life for an increasing number of people. It has now become common as recommended by the World Health Organisation<sup>10</sup> in the sociology of sickness to distinguish between impairment and disability. Impairment refers to abnormality in structure and function of the body through disease or injury, while disability refers to restriction of activities of daily living which may result directly from impairment but may also be social such as negative reaction from others, lack of resources and restricted opportunities in work and leisure.<sup>11</sup> This may also be behavioural and attitudinal as reported in part of my doctoral work.<sup>12, 13</sup>

There is a rising epidemic of non-communicable diseases in sub-Saharan Africa<sup>14</sup> that includes Cardio Vascular diseases, diabetes mellitus and obesity.<sup>15</sup> Non-communicable

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<sup>9</sup> Badley (1993), stresses that it cannot be denied that many disabilities are socially determined.

Whether or not individuals need carry out certain activities, depends on the circumstances in which they find themselves and whom they are. As discussed above, the crucial aspect of disability is limitation or restriction in the performance of activity. Handicap is concerned with the impact of those disabilities on the individual's life. In much of the discussions about handicap, the distinction between how an activity is carried out and the implication of activity restrictions for related roles in a social and cultural setting has often been lost. According to Badley (1993), suggestions had been made that all instrumental activities of daily living should be subsumed into the handicapped dimension. This redefinition of the general term 'handicap' appears to constitute an important breakthrough because it contextualises handicap as the social consequences of disability and impairment. As a consequence, the fixed and unchanging character of 'being handicapped' is being replaced by an understanding of the multiplicity of kinds of interaction that a handicapped individual experiences in both the physical and social environment.

<sup>10</sup> A systemic approach of thinking about diseases was found in the taxonomy that was first developed for the WHO, by Dr Philip Woods of Manchester England in 1976 namely The International Classification of Impairments, Disabilities and Handicaps (ICIDH) (WHO, 1980). The three concepts of disability, impairment and handicap, which are distinct and important dimensions of human experience in the context of disease, were identified (Locker, 1991). According to the WHO (1980: 143), disability is any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being. In the present dispensation, disability is referred to as activity limitation (WHO, 1997:5).

While impairment is defined as any loss or abnormality of psychological, physiological or anatomical structure or function, (Locker, 1991:84; WHO, 1980: 47). The WHO (1997:5), clearly refers to this as impairments of functions and impairments of structures. The WHO (1980: 14), also indicated that the concept 'handicap' is concerned with the disadvantages experienced by the individual as a result of impairments and disabilities. Handicap thus reflects the interaction with adaptation to the individual's surrounding. The term participation is currently used instead of handicap (WHO, 1997:5). The extent of participation depends on age, sex social and cultural factors (Locker, 1991:84).

<sup>11</sup> Taylor S. 2000. Health, Illness and Medicine In Sociology : Issues and Debates. (Ed) Steve Taylor. Palgrave: New York. pp253-276.

<sup>12</sup> Useh U 2005. Attitudes of parents to Children with Disability: Case study of Venda People of Limpopo. PhD Thesis: University of Venda.

<sup>13</sup> Useh U (2008). Socio-Demographic Characteristics of Parents and Emotional Burden on Discovery of Disabilities of their Children in a South African Community. SA Journal of Physiotherapy 2008 Vol 64 NO 1: 21-27

<sup>14</sup> Debbie Bradshaw, Krisela Steyn, Naomi Levitt, and Beatrice Nojilana Non-Communicable Diseases – A race against time

diseases (NCDs) are chronic medical conditions or diseases which are non-infectious. Common examples include stroke, heart attacks, diabetes, cancer, asthma and depression. Some of the major NCDs are preceded by unhealthy behaviours followed by the emergence of metabolic risk factors and disease. The risk factors associated with NCDs are overweight and obesity, high blood pressure, increased blood glucose levels and non-optimal blood cholesterol levels (particularly raised LDL cholesterol). Most of these risk factors are considered modifiable through changes in behaviours or medications. The key behaviours that would reduce risk factors for NCDs are eating a healthy diet, participating in regular physical activity, not using tobacco, and avoiding harmful use of alcohol.<sup>16</sup>

Chronic diseases are a growing cause of death and disability in South Africa<sup>17</sup>. According to the strategic document of the Department of Health, there is an increased contribution of Non-Communicable Diseases (NCDs) to the Burden of Disease (BoD).<sup>18</sup> In South Africa, emerging evidence from empirical studies estimate that NCDs account for 11-13% of the BoD<sup>19</sup>. The health sector wishes to implement enhanced programmes for prevention and treatment of lifestyle related diseases, as well as co-ordinate inter-sectorial or/ and inter-professional approach<sup>20</sup>.

## **7 The body and society healing continuum**

### **7.1 Integration of the concepts**

The WHO<sup>21</sup> attempts to link the three concepts of impairment, disability and handicap with caution since adequate information on the relationship between these concepts are not provided. Figure 1 provides a graphic presentation of such an integrated model.

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<sup>15</sup> Ozlem & Nieman, 2010

<sup>16</sup> Norman R, Bradshaw D, Schneider M, Joubert JD, Groenewald P, Lewin S, Steyn K, Vos T, Laubscher R, et al the SA CRA Collaborating Group. A comparative risk assessment for South Africa in 2000: Towards promoting health and preventing disease. *S Afr Med J* 2007; 97: 637-41.

<sup>17</sup> Senekal, Steyn & Nel 2003

<sup>18</sup> Kopelman, 2007

<sup>19</sup> Himes 2000

<sup>20</sup> Bradley & Puoane, 2007

<sup>21</sup> WHO, 1980: Although this graphic representation suggests a simple linear progression along the full sequence, the situation is in fact more complex. In the first place, handicap may result from impairment without the mediation of a state of disability. A disfigurement may give rise to interference with the normal operation of cues in social intercourse, and it may thus constitute a very real disadvantage, to say nothing of the embarrassment that the disfigured individual may feel. In this example, it would be difficult to identify any disability mediating between the disfigurement and the disadvantage. Similarly a child with coeliac disease is functionally limited but may be able to live a fairly normal life and not suffer activity restriction; he/she could nevertheless suffer disadvantage by virtue of his/her inability to partake of a normal diet (Wagstaff, 1982; Hanekom and Marks, 1997; Grimby et al., 1993; Marks, 1997; Imrie, 1997). More important than these incomplete sequences is the possibility of interruption at any stage. Thus one can be impaired without being disabled and disabled without being handicapped. The corollary of this is that there can be striking disparities in the degree to which the various element of the sequence depart from their respective norms, and as a result one cannot assume consonance in degrees of disabilities and handicap. For instance one individual with rheumatoid arthritis may be only mildly disabled and yet at a severe disadvantage, whereas another person with the same disease who is much more severely disabled may perhaps because of greater support of the family or social network, experience considerably less disadvantage (WHO, 1980). The WHO (1997) also reveals that the terms of 'exteriorized' and 'objectified' used in the 1980 model version were now a deprecated term.

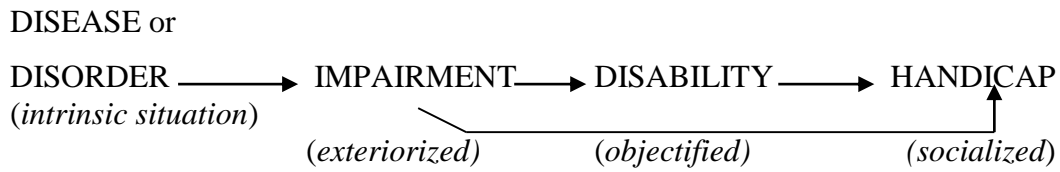
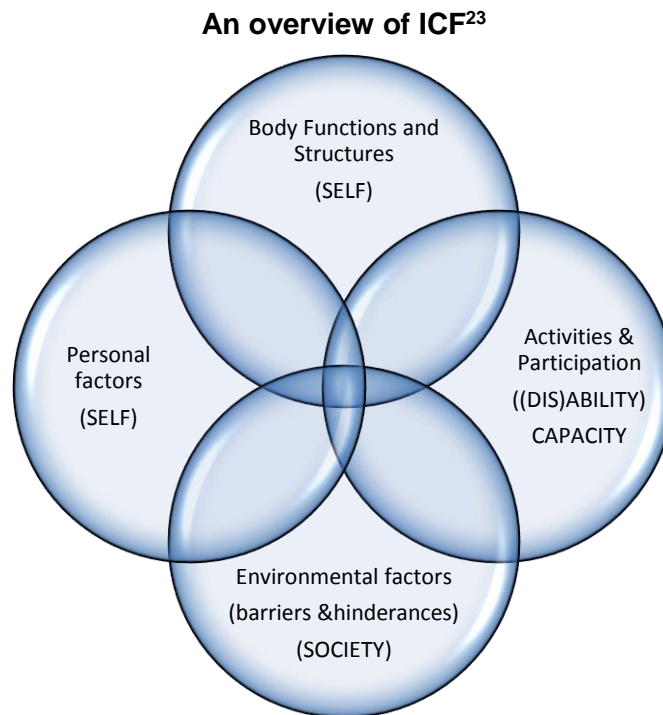


Figure 1: Graphic representation of the integration of the concepts of Impairment, Disability and Handicap<sup>22</sup>



According to Locker<sup>24</sup>, the concepts are linked dynamically (Figure 2).

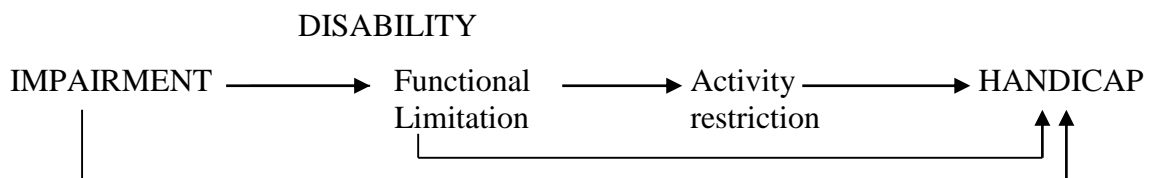


Figure 2. Dynamic linkages between the three concepts<sup>25</sup>

<sup>22</sup> WHO, 1980

<sup>23</sup> World Health Organisation 2001. International Classification of Functioning, Disability and Health. WHO: Geneva

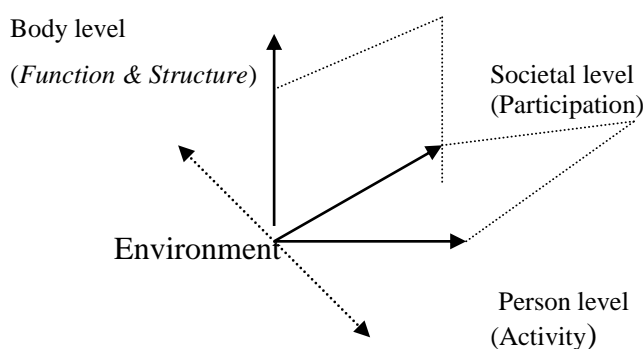
<sup>24</sup> Locker 1991.

<sup>25</sup> Locker, 1991:84 These linkages of the concepts have changed with time from 1980 to 2001 (WHO, 1980; WHO, 1997 and 1999; World Health Assembly (WHA) 2001).



## 7.2 Interactions and multiple models

In view of these multidimensional aspects of the disablement process, multiple models are necessary to study the disablement phenomena as an interactive and evolutionary process.<sup>26</sup> According to the WHO<sup>27</sup>, disablements are multidimensional phenomena. According to this model, disablement is seen as an interaction/complex relationship between the health condition and the contextual factors (i.e. environmental and personal factors). There is a dynamic interaction amongst these factors: intervention at one level has the potential to modify other related elements. The interactions are specific and not always in a predictable one-to-one relationship to each other. Contextual factors include factors that interact with the person with disability to determine the level and extent of the person's participation in his or her surroundings. Environmental factors are extrinsic to (outside of) the individual (e.g. the attitude of the society, architectural characteristics, the legal system). Personal factors also have an impact on how disablement is experienced. These include: gender, age, other health conditions, fitness, lifestyles, social background, education, profession and past and current experience, overall behaviour pattern and character style, individual psychological assets and other characteristics that may play a role in the experience of disablement. Impairment is now replaced with body function and structures and with the contextual factors distinctly separated, though still interactive<sup>28</sup>. Instead of the unidirectional approach, the WHO<sup>29</sup>, presents a continuum approach with boundaries to be drawn between Body functions, Activities and Participation and as a multidimensional co-existence (Figure 3)



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<sup>27</sup> WHO, 1999.

<sup>28</sup> WHO, 1999:23.

<sup>29</sup> WHO, 1999

Figure 3. Conceptualization of dimensions of functioning and disability<sup>30</sup>

The International Classification of Functioning (ICF) presented slightly different interactions between the components of ICF (Figure 3)<sup>31</sup>

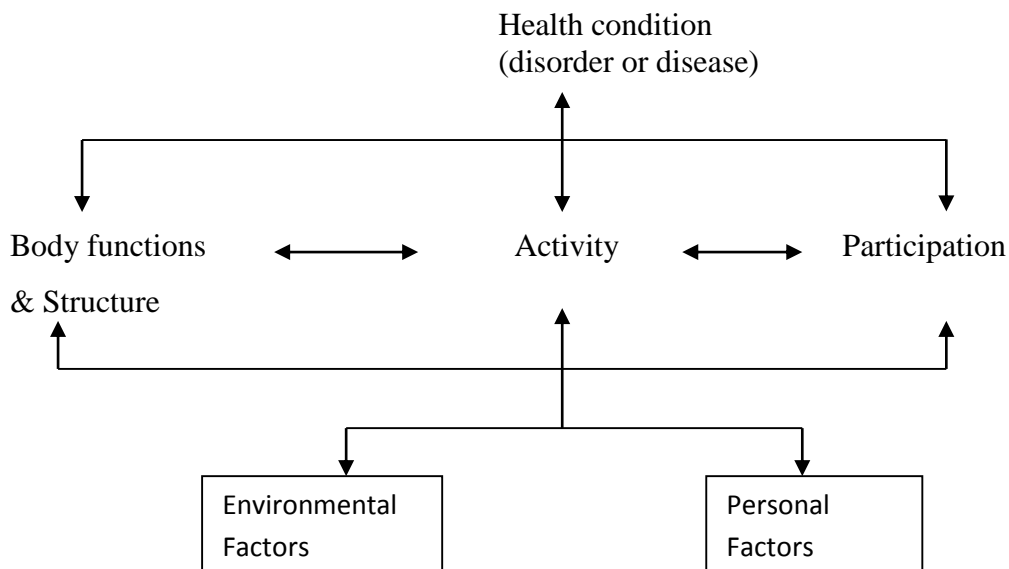


Figure 4. Interactions between the components of ICF<sup>32</sup>

Madam Campus Rector, the WHO models concentrated on the disablement of the adult persons with impairment with no mention of the factors that would affect societal integration of children with disabilities. The omission of the experiences of the disablement of close 'normal affected' individuals like parents, children, spouses and guardians of a person with disability was also observed. Parents and guardians and other 'normal' people living with the disabled individual experiences 'two worlds'; one as a 'normal' person and the other one as a person that is disabled by the society. This was part of my contribution to the new World Health Organisation's ICF in the course of its review<sup>33</sup>.

<sup>30</sup> WHO, 1999:26

<sup>31</sup> WHA, 2001:18.

<sup>32</sup> WHA, 2001. The cause of the disability could be environmental, attitudinal, etc. The disability is

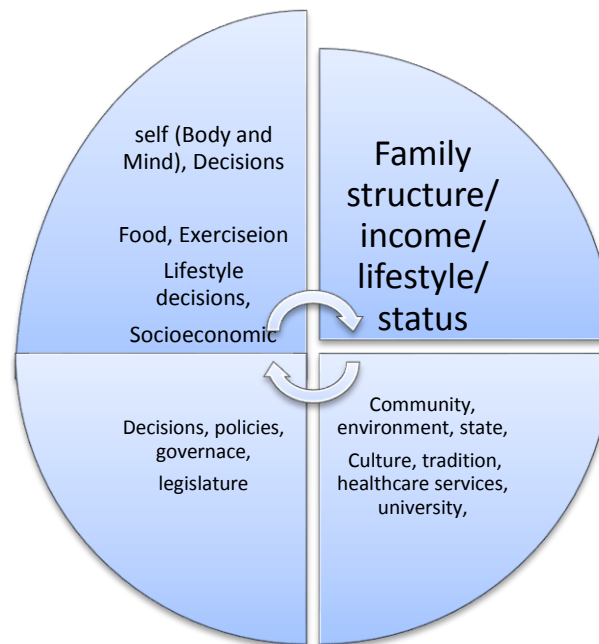
usually imputed by the society. For example when children or minors with disability cannot directly access general facilities, the burden is on the parents to assist and provide succour. When this cannot occur due to a variety of factors, parents and guardians feel inadequate in their parenting abilities. In some societies, stigma, prejudice, and stereotyping are extended to parents of CWD (Kromberg et al. 1987:915). The environmental, societal and personal factors mentioned in the WHO models directly affect the persons with disability, and also indirectly affect parenting. Parents in no little way also experience disablement. This 'disablement by proxy' that has not been adequately captured by WHO and in literature, influences parental attitudes and behaviours towards CWD. This study however adopted the WHA (2001:18), which fits into the sociological approach. Different models of disabilities have been presented and recognized by many authors (Badley, 1993; Weitz, 1996; WHO, 1997; Mark 1997). Marks (1997) says that rather than seeing disability as a clear-cut fixed condition, it is more accurate to see disability as existing along a continuum with blurred and changing boundaries.

<sup>33</sup> WHO ICF 2001

## 8 Health at societal level

Social interactionists believe that an individual's social reality is constructed through a dialectical relationship with his or her social environment, the scene of negotiation and attribution of shared meanings amongst members of a given group or culture. This process of social negotiation also contributes to the construction and evolution of a given culture and to the establishment of its norms and practices.<sup>34</sup> This way of viewing social interaction allows a place for both individual and collective interpretations.

### 8.1 Self and society nexus: in prevention and rehabilitation



Applying these theoretical insights to the field of the study of chronic disorders or illness and impairment, some researchers in sociology and social psychology have shown that a sick person participates in the social construction of his or her illness. A rupture usually follows the onset of impairment in the interpretive systems, which gives the individual his or her sense of self. This necessitates the mobilisation of specific cognitive resources<sup>35</sup>.

<sup>34</sup> Ville et al., 1992: 168.

<sup>35</sup> Albrecht (1982:7) reveals that the social isolation and economic and personal dependency that frequently result from disability also influence the person's mental status. The disruptive consequences of this dependency have far-reaching effects on self-esteem and self-concept. After the onset of trauma or disease, the disabled person has to reconstruct his/her new self-identity through social interaction. The person is forced to ask the question posed by the symbolic interactionists. "Who am I?". This reconstruction process of self-identity and meaning for the disabled person is difficult because he had a new set of data, resources, and expectations with which to work. Albrecht (1982:7) stresses that the disabled individual's redefinition of roles takes place through social interaction with his/her family, friends, coworkers, other disabled persons, and members of the medical staff. The biggest problem for them is that disability affects their interaction with others. Therefore they cannot rely on old patterns to reconstruct many of their social relationships with others as they rebuild their roles and self-identity.

An understanding of the consequences of disease for the social life of an individual presupposes above all, a theoretical framework, which defines the relationship between the sick individual and society. Social interactionists believe that an individual's social reality is constructed through a

## 9 Part I: Health and fitness

Body composition or adiposity is an important measure of health related fitness. This is measured either through Body Mass Index or skin fold. Body Mass Index (BMI) is a person's weight in kilograms divided by the square of their height in metres. It is one of the most commonly used ways of estimating whether a person is overweight and hence more likely to experience health problems than someone with a healthy weight. It is also used to measure population prevalence of overweight and obesity. It is used because, for most people, it correlates reasonably well with their level of body fat. It is also a relatively easy, cheap and non-invasive method for establishing weight status. However, BMI is only a proxy for body fatness. Other factors such as fitness, ethnic origin and puberty can alter the relation between BMI and body fatness and must be taken into consideration. Other measurements such as waist circumference and skin thickness can be collected to indicate a person's weight status or body fatness. None of these is as widely used as BMI.<sup>36</sup>

Lifestyle related conditions are largely preventable.<sup>37</sup> Unequivocal evidence exist that the combination of health policy at the societal level and health education at the individual and family level related to smoking cessation, optimal nutrition, weight control and physical activity and exercise, optimal sleep, and stress management would largely prevent, manage, and in some cases reverse these conditions.<sup>38</sup> In order to effectively manage the diseases of lifestyles and its disabling effects in African population, we studied health related fitness characteristics of cardiovascular, strength, endurance, flexibility and body composition in apparently healthy individuals in Zimbabwe<sup>39, 40</sup>

We also documented BMI and anthropometric characteristics of the city of Harare urban dwellers of Zimbabwe. The investigation also included measurement of adiposity though the use of sum of skin folds (SSF). This was a cross sectional study in designated fitness awareness locations in the city of Harare during the 1998 physiotherapy awareness week. The participants were 140 apparently healthy adults, males (n = 71) and females (n = 69). The minimum and maximum values of BMI were 17.7 and 33.3 for men, 17.6 and 47.8 for women. BMI was not found to increase with aging but PBF on the contrary did. The mean BMI value for the males and females was 24.89 +/- 3.18 and 27.8 +/- 5.89 respectively. There was no significant difference in mean BMI between sexes (p = 0.331). BMI showed a significant positive correlation with PBF, SSF, body weight and age (for males r = 0.721, 0.731, 0.900, 0.369, p < 0.01 respectively; and in females r = 0.786, 0.804, 0.940, 0.404 and p < 0.01 respectively).<sup>41</sup> Women were also found to have higher BMI, PBF, SSF than their male counterparts<sup>42</sup>. There was a linear relationship between BMI and PBF, and all the variables investigated except age and stature in both sexes. Because of the differences of

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dialectical relationship with his or her social environment, the scene of negotiation and attribution of shared meanings amongst members of a given group or culture. This process of social negotiation also contributes to the construction and evolution of a given culture and to the establishment of its norms and practices (Ville et al., 1992: 168). This way of viewing social interaction allows a place for both individual and collective interpretations. Applying these theoretical insights to the field of the study of chronic disorders or illness and impairment, some researchers in sociology and social psychology have shown that a sick person participates in the social construction of his or her illness. A rupture usually follows the onset of impairment in the interpretive systems, which gives the individual his or her sense of self. This necessitates the mobilisation of specific cognitive resources.

<sup>36</sup> NHS 2009. National Obesity Observatory [http://www.noo.org.uk/uploads/doc789\\_40\\_noo\\_BMI.pdf](http://www.noo.org.uk/uploads/doc789_40_noo_BMI.pdf)

<sup>37</sup> Gallassie 2004

<sup>38</sup> Dean ,Sundquist & Johansson ( 2011).

<sup>39</sup> Bird SR, Smith A, James K (2002). Exercise benefits and prescription. Cheltenham: Nelson Thornes Ltd

<sup>40</sup> Useh U and Onesmus N (2000). Selected Health related fitness characteristics of adolescents in Zimbabwe. Book of Abstract, AMRD University of Zimbabwe: Blair Research Institute

<sup>41</sup> Useh U, Mbajjorgu FE, Feresu SA, Madzivire D (2000). Cent Afr J Med. 2000 Apr;46(4):101-5

<sup>42</sup> Useh U, Mbajjorgu FE, Feresu SA, Madzivire D (2000). Cent Afr J Med. 2000 Apr;46(4):101-5

environment and industrialisation, estimation of BMI should involve other factors as ethnicity, race, gender and age .<sup>43</sup>

### **9.1 Anthropometry, BMI and performance in sports**

Amongst conditioned athletes, body type and structure could be used predict performance and injury prevention in competitive sports. Physical activity is very important for all human beings and the benefits are well-documented for both genders<sup>44</sup>. The level of physical activity will differ in frequency, intensity, and duration depending on gender, age, and type of physical activity<sup>45</sup>. Sport is defined as physical activity involving a structured competitive situation governed by rules<sup>46</sup> According to Strong et al,<sup>47</sup> numerous benefits of sport to women have been documented. Amongst these are lifestyle improvements, low teenage pregnancy rate, low drug and alcohol use and abuse, higher graduation rate, improved self-esteem and body image, increased bone mass, cardiovascular function and weight control.<sup>48</sup>

We sought to investigate the association between the three anatomical factors of Q-angle (QA), pelvic width (PW) and Intercondylar notch width (INW) and knee injuries among the U-23 female soccer players of South Africa in a case-control prospective study. Twenty four U-23 women soccer players of the South African team were purposively chosen to participate in this study. Participants were divided into two groups: group1 (Case) was those with knee injuries, while those without injuries were in group-2 (Control). PW and INW were measured after X-rays of the hip were taken while the QA was measured manually with the goniometer. Association between anatomical factors and knee injuries were tested with ANOVA. Q-angle ranged from 140 to 180 for injured and non- injured groups. PW was between 24 -29 cm for both injured and non-injured groups. INW was between 1.3mm and 2.8mm for the right and between 1.4mm and 2.5mm for the left notch for the injured group, while INW for the right and left of the non-injured group were between 1.7mm to 2.1mm and 1.8mm to 2.1mm, respectively No significant association between knee injuries and each of the anatomical factors was found QA (p= 0.74), PW (p=0.34), INW (right and left respectively) (p=0.142 & p=0.089). The three anatomical factors of QA, PW and INW could not be used to predict knee injuries amongst the U- 23 female players in South Africa.<sup>49</sup>

Gaoua, Rejeb and Chtara<sup>50</sup> in one of their studies, drew some conclusions that the occurrence of sports injuries depends on several psychological factors which are: self-confidence, fear control, stress reactions, relaxation, focusing and competition planning. Life stress may predispose an athlete to peripheral narrowing, which may increase the likelihood of missing important environmental cues, in turn increasing susceptibility to injury. Once an athlete becomes injured, both physiologic and psychological processes occur.<sup>51</sup> Football is an impact collision sport, with injuries occurring in both contact and non-contact situations. Injuries may be caused by complex interactions between internal and external risk factors.

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<sup>43</sup> Useh U, Mbajorgu FE, Feresu SA, Madzivire D (2000). Cent Afr J Med. 2000 Apr;46(4):101-5

<sup>44</sup> Strong WB, Malina RM, Blimkie CJ, et al. Evidence based physical activity for school- age youth. The journal of Pediatrics .2005; 146:732-737.

<sup>45</sup> Strong WB, Malina RM, Blimkie CJ, et al. 2005. Evidence based physical activity for school- age youth. The journal of Pediatrics .2005; 146:732-737.

<sup>46</sup> Caspersen C, Powell KE, Christenson GM. 1985. Physical Activity, exercise and physical fitness: definitions and distinctions for health related research .1985; 100:126-130.

<sup>47</sup> Strong WB, Malina RM, Blimkie CJ, et al.

<sup>48</sup> Strong WB, Malina RM, Blimkie CJ, et al.

<sup>49</sup> Mohamed E E, Useh U, Mtshali BF (2012). Q-angle, Pelvic width, and Intercondylar notch width as predictors of knee injuries in women soccer players in South Africa. African Health Sciences, Vol 12 No 2: June :174-180.

<sup>50</sup> Gaoua, Rejeb and Chtara

<sup>51</sup> Joni et al., 2000.

The internal factors such as age, sex, and body compositions may influence the risk of sustaining injuries, predisposing the player to injury, and are therefore by definitions risk factors. We reviewed articles and draw attention to the prevalence, severity and mechanism of football injuries. A review of 22 published articles was done using the Health internet network access to Research (HINARI) Database. The articles revealed that the risk of injury in professional football is substantial; its prevalence astronomical and extremely severe. Injuries also affect performance in a negative way and teams that can avoid injuries have greater success as evaluated by their position in the league system. Prevention of injury in football is of utmost importance, and conducting an injury surveillance study is fundamental and first step in the sequence of prevention. On the mechanism of the injuries, their result showed that tackling/being tackled, jumping, landing, turning and twisting; running, shooting and collisions are the mechanism of football injuries. Most sprains occurred either after a tackling situation or after a change in direction. It can be concluded from the review that the major mechanisms of traumatic football injuries were tackling/being tackled, jumping, landing, turning, falling and collisions with other players/opponents. Players' age, role/position of play, history of previous injuries, and psychological factors (like self-confidence, fear, somatic trait anxiety, aggression, poor stress coping ability) were identified as predictors of sports injuries in most of the literatures that the researchers reviewed.<sup>52</sup>

The pattern of injuries is of utmost interest with the view of its prevention. We studied this pattern amongst elite players in one of the most competitive league in Africa in Association football, otherwise known as soccer. The study was aimed at describing the types, severity, prevalence and mechanism of injuries among professional footballers in the Nigeria Premier League (NPL). The Union of European Football Association (UEFA) Injury Study Questionnaire was used for data collection. A total of 240 footballers from 11 clubs, who participated in the 2011/2012 NPL premiership season, were selected through proportionate stratified random sampling technique, and the participants were studied using a prospective cohort study design for 6 months. The mean (standard deviation) age, height and weight of the injured footballers was 22.9 (3.4) years, 1.69 (0.05) m and 71.3 (3.9) kg, respectively. There was high injury prevalence (78%) associated with actual league games, whereas the incidence rate per 1 000-hour exposure was 300.2 exposure-hours from 19 games within 6 months. Sprain (32%) was the predominant type of injury recorded. The tackle event (34%) was the predominant mechanism of injury recorded, and 63% of the injuries led to 1 - 3 days of player absence from football activities. Most of the injuries were recurrent injuries (63%). We found a high occurrence of injuries in the NPL, in particular associated with league (competitive) games. The findings of this study will serve to guide the development and implementation of injury prevention strategies in the NPL.<sup>53</sup>

## **9.2 Is history relevant to our choice of sport?**

Our interests, body types, food and lifestyle could determine our choice of sport. In a historical research conducted in 2002, using historical, anthropological, and sports texts, in Africa of selected indigenous African sports. Physical skills, socio-cultural and the historical similarities were found in different African populations. It was revealed that similarities in the historical background of the colonised Africans existed, despite ethnical diversity in the continent. Also revealed were similarities in vocations, cultures, environment and the

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<sup>52</sup> Ibikunle, P.O, Ani, U. K ,Useh. U, Akosile, C.O (2014).Mechanisms of sports injuries among professional footballers: Review of literature. African Journal of Physical Health, Recreation and Dance. vol 20 (2:1) June 2014: 453-479

<sup>53</sup> Ani UK Ibikunle, P O, Akosile C O, Useh U. 2015. S The UEFA model in identification of types, severity and mechanism of injuries among professional footballers in the Nigerian Premier League Afr J Sports Med 2015;27(1):12-15. DOI:10.7196/SAJSM.514

indigenous sports of physical skills amongst Africans. The sports scientist of African origin should strive to identify what is beneficial and entertaining and sieve this from what is hazardous and still attempt to maintain the cultural heritage of the Africans<sup>54</sup>.

## 10 Part II Society and disabling lifestyles

United Nations (UN) estimates that the population of the people with disability (PWD) is between 225 and 350 million people. A large majority of them live in the developing countries; very often living without optimal, technical, medical or social support that could improve their level of living considerably. They are often marginalised and belong to the poorest segments of the society.<sup>55</sup> It is also estimated that every sixth person in Africa has some form of disability<sup>56,57</sup>. My research also focused on the role of society in the healing continuum: the *continuum societatem*. My research looked at the outcome measures and role of the society in disability; the work place in the prevention on injuries and accessibility of the environment to persons with impairments and activity limitations (and disabilities).

Accessibility for persons with disability was a challenge before the declaration of the International Year of Disabled Persons (IYDP)<sup>58</sup>, by the United Nations (Note that, this is used deliberately because the society was blamed for the disabling effect on persons with different impairments). About twenty years after this declaration in 2001, we evaluated accessibility of wheelchairs into public buildings in the central business district of Harare, Zimbabwe to identify architectural barriers faced by wheelchair users in public buildings. This was a descriptive study of 20 public buildings in the Harare business district of Zimbabwe. Wheelchair accessibility was determined on a point scale based on specifications provided. Descriptive statistics of simple percentages and means were used to determine the level of compliance to the guidelines of the instrument, and wheelchair accessibility to the surveyed buildings. It was revealed that of the various items surveyed, elevators recorded the highest average accessibility (83% compliance), while parking areas recorded the lowest average of 18%. The compliance score of ramps was 39%, while entrances were 71% compliant. Wheelchair accessibility to toilets was 51%. The poor compliance score for items such as parking areas, and ramps for wheelchair users was probably because the physically challenged persons and experts in the area of physical ability management are not consulted and involved in the design and construction of these buildings. High compliance of entrances and toilets might be purely coincidental and not for meeting the needs of wheelchair users. To improve on the wheelchair accessibility in public buildings, there should be liaison between the users- the disabled, and various professionals (the occupational therapists, physiotherapists, politicians, engineers and architects).

The findings of this study indicate a great challenge to the aforementioned professionals. Recommendations were made to increase wheelchair accessibility to public buildings.<sup>59</sup>

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<sup>54</sup> Useh U (2002) A review of historical, geographical and vocational influences on selected indigenous African sports: the challenges for the sports scientists. *Journal of Physical, Health Education and Sports*, Hong Kong, Vol 8, No 2:32-37.

<sup>55</sup> UN, 1996.

<sup>56</sup> Griffith 1996.

<sup>57</sup> UNDP, 1994.

<sup>58</sup> July 1 1981 was declared as the International Year of Disabled Persons by the United Nations.

<sup>59</sup> Useh U, Moyo AM, Munyonga E. (2001). Wheelchair accessibility of public buildings in the central business district of Harare, Zimbabwe. *Disability and Rehabilitation*, Vol 23 No 11, July: 490-496

Madam Campus Rector, this same study by Useh and others, have been cited and in some instances replicated in more than 20 other countries including the United States of America, Turkey, United Arab Emirates, South Africa, Nigeria, Mexico, Zambia, India, Canada, Sweden, Botswana, Hong Kong and Greece, Malaysia to name a few. Madam Rector, permit me to share a few of the results with the University Community.

### **10.1 A pilot study of functional access to public buildings and facilities for persons with impairments<sup>60</sup>**

A four-member participant team representing three impairment types: mobility impaired person using a wheelchair, mobility impaired person who was not a wheelchair user, visually impaired person, and a control with no known impairments, challenged a stratified random sample of 30 public buildings in Greater Boston. Using a task oriented data collection instrument, functional access was determined in terms of percentage of tasks performed, time, distance, barriers and facilitators. Overall, task performance was high for the team. However, the wheelchair user reported a lower task performance (81%) in comparison to the control (100%) and persons with mobility and visual impairments (97–98%). There was little variation in mean values for time and distance to complete tasks. More barriers were reported by the persons with mobility impairments, wheelchair user and non-wheelchair user, and; highest facilitators by the person with visual impairment and the wheelchair user. The control reported the lowest barriers and facilitators. The types of barriers and facilitators varied for the three impairments and the control – structural for wheelchair and mobility impairments, way finding for visual impairment and interpersonal for control.

More: <http://informahealthcare.com/doi/abs/10.1080/09638280310001649543>

### **10.2 Quantifying environmental factors: A measure of physical, attitudinal, service, productivity, and policy barriers<sup>61</sup>**

Panels of experts on disability developed items for the Craig Hospital Inventory of Environmental Factors (CHIEF). The instrument measured the frequency and magnitude of environmental barriers reported by individuals. Five subscales were derived from factor analysis measuring (1) attitudes and support, (2) services and assistance, (3) physical and structural, (4) policy, and (5) work and school environmental barriers. The CHIEF total score had high test-retest reliability (intraclass correlation coefficient [ICC]=.93) and high internal consistency (Cronbach  $\alpha$ =.93), but lower participant-proxy agreement (ICC=.62). Significant differences were found in CHIEF scores among groups of people with known differences in disability levels and disability categories. The CHIEF has good test-retest and internal consistency reliability with evidence of content, construct, and discriminant validity resulting from its development strategy and psychometric assessments in samples of the general population and among people with a variety of disabilities.

### **10.3 Wheelchair accessibility to public buildings in Istanbul<sup>62</sup>**

Accessibility to public environment is the human right and basic need of each citizen and is one of the fundamental considerations for urban planning.

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<sup>60</sup> Neela Thapar, Grace Warner, Mari-Lynn Drainoni, Steve R Williams, Holly Ditchfield, Jane Wierbicky, and Shanker Nesathurai 2004. A pilot study of functional access to public buildings and facilities for persons with impairments.

<sup>61</sup> Gale G Whiteneck, Cynthia L Harrison-Felix, David C Mellick, C.A Brooks, Susan B Charlifue, Ken A Gerhart, 2009. Quantifying environmental factors: A measure of physical, attitudinal, service, productivity, and policy barriers Disability and Rehabilitation

<sup>62</sup> Nilay A E. 2009 Wheelchair accessibility to public buildings in Istanbul Disability and Rehabilitation



Madam Rector, this was a descriptive study of 26 public buildings in CBD of Istanbul. The instrument used is the adapted Useh, Moyo and Munyonga questionnaire to collect the data from direct observation and measurement. Descriptive statistics of simple percentages and means are used to explain the compliance to the guidelines of the instrument and wheelchair accessibility. This article describes the example of the compliance of public buildings accessibility when the country has legislation, but lacking regulations about accessibility for the wheelchair users.

#### **10.4 Wheelchair accessibility: Descriptive survey of curb ramps in an urban area<sup>63</sup>**

To determine the extent to which curb ramps in an urban area met a set of wheelchair accessibility guidelines. Although curb ramps were usually present at intersections, only a small proportion of them met all of the accessibility criteria evaluated. This finding has implications for those responsible for installing and maintaining curb ramps and suggests that wheelchair users and their caregivers should learn the wheelchair skills needed to overcome such accessibility barriers.

#### **10.5 An investigation into the physical accessibility to wheelchair bound students of an Institution of Higher Education in South Africa<sup>64</sup>**

This descriptive cross-sectional study was undertaken to establish the ease of accessibility to wheelchair bound students of the campus of a large institution of higher education in South Africa. Accessibility was defined not simply in terms of access to buildings, but also of the added time and distance travelled by wheelchair bound students on the campus. Conclusions: Wheelchair-bound students consistently had to travel further and for longer times between lecture theatres in all the faculties measured. The students would therefore be unable to reach their lectures within the 10 minute time allocated by the university. The inaccessibility of the buildings limits the full integration of wheelchair-bound students into campus life. Certain administrative changes might assist in improving the ease of accessibility. Architectural adaptations, although more costly, might also prove to be effective.

#### **10.6 Wheelchair accessibility of public buildings in Ibadan, Nigeria<sup>65</sup>**

Integration of wheelchair bound individuals into the society requires accessibility to any building, especially public buildings in any part of the world. This study assessed the wheelchair accessibility of selected public buildings in Ibadan, Nigeria. Thirty-eight public buildings housing hospital, education, social and recreation centers and government ministry/agencies were surveyed. The doorway width, height of thresholds and steps, width of routes and grade of ramps were measured and computed. Accessibility was determined using an abridged form of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Only 7(18.4%) of the 38 buildings, 45.1% of the entrances and 19.4% of the routes were wheelchair accessible. The most accessible buildings were the hospitals (66.7%), while none of the social/ recreation buildings was accessible. This study revealed low level of wheelchair accessibility of public buildings in Ibadan, Nigeria, a factor that could limit opportunities for community integration of the wheelchair users

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<sup>63</sup> Sean Bennetta, Ronald Lee Kirby, Sean Bennetta, Ronald Lee Kirby & Blair Macdonald 2003. Wheelchair accessibility: Descriptive survey of curb ramps in an urban area. Disability and Rehabilitation pages 17-23

<sup>64</sup> LO. LOSINSKY, T. LEVI, K. SAFFEY & J. JELSMA Disabil Rehabil. 2003 An investigation into the physical accessibility to wheelchair bound students of an Institution of Higher Education in South Africa Disabil Rehabil. 2003 Apr 8;25(7):305-8.

<sup>65</sup> T.K. Hamzat\*, O.O. Dada Wheelchair accessibility of public buildings in Ibadan, Nigeria

### **10.7 Wheelchair accessibility of public buildings in Al Ain, United Arab Emirates (UAE)<sup>66</sup>**

The purpose of this study was to assess the accessibility to public buildings for wheelchair users in Al Ain, the fourth largest city of the United Arab Emirates. A wheelchair user would have encountered many and difficult architectural barriers if he had visited any of the public sites surveyed in the city of Al Ain. The results of this study show that much has actually been accomplished in the field of wheelchair accessibility of public buildings in the UAE city of Al Ain, despite the absence of legislation. This study could be seen as an example of what happens when the modern urban environment evolves in a non-regulated context, lacking legislation protecting and ensuring the accessibility for the wheelchair bound member of society.

### **10.8 Community Participation: Challenges for People with Disabilities Living in Oaxaca, Mexico, and New Mexico, United States<sup>67</sup>**

The use of wheelchairs or other mobility aids often limits the community participation of people with disabilities because of architectural barriers present in buildings. Although this has been recognized as a global problem, little research has been done to document accessibility standards on an international level. This study reports results from a survey using the Americans With Disabilities Act Accessibility Guidelines Checklist for Buildings and Facilities to measure the differences in levels of accessibility in Albuquerque, New Mexico, United States, and Oaxaca, Oaxaca, Mexico. Investigators surveyed four building types (stores, restaurants, churches, and government buildings or public museums) in both geographic locations to determine whether each building was accessible. The findings showed that buildings in Albuquerque were significantly ( $p < .0001$ ) more accessible than buildings in Oaxaca on all measurement items and across all four building types. However, many buildings in Albuquerque were not fully accessible.

### **10.9 Wheelchair Ramp Navigation in Snow and Ice-Grit Conditions<sup>68</sup>**

Climatic Engineering and Testing Chamber (Ottawa, Canada). Manual wheelchair users (N=11) who typically self-propel their wheelchair in winter. Ramp ascent and descent at 3 grades (1:10, 1:12, 1:16) and 2 winter conditions (packed snow, packed snow with a freezing rain cover, and traction grit). Type of ascent and descent strategy, success rate, number and severity of obstructions, average speed, and perceived ramp navigation rating. A questionnaire regarding the subject's past experiences with wheelchair propulsion in winter. Snow accumulation on ramps at 1:10 grade will render the ramp inaccessible for many wheelchair users who do not have external assistance. For snow conditions, the transition area from the level group to the first 2m of ramp incline were the most difficult to traverse for both ascent and descent. All subjects were able to ascend and descend the ramp for the ice-grit condition. Two-railing propulsion is a preferred strategy for ice-grit ramp navigation because of enhanced trajectory control and reducing the potential for wheel-slip problems. Backwards ramp ascent was a successful strategy for ascent in soft-snow conditions.

The 1:16 grade is preferred for winter ramp navigation. Backwards ramp ascent for snow conditions should be considered for people with sufficient shoulder and trunk range of motion. Two handrails are recommended for exterior ramps for both propulsion and wheelchair extraction from ruts and other snow-related obstacles. For ice ramp navigation, the amount of grit required and the effective time (ie, time to when grit becomes embedded

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<sup>66</sup> Daniel Rivano-Fischer Wheelchair accessibility of public buildings in Al Ain, United Arab Emirates (UAE). Disability and Rehabilitation Volume 26, Issue 19, 2004

<sup>67</sup> Terry K, Crowe Sarah, Picchiarini Tracey Poffenroth

<sup>68</sup> Edward D. Lemaire, PhD, Patricia A. O'Neill, Marcel M. Desrosiers, D. Gordon Robertson, Wheelchair Ramp Navigation in Snow and Ice-Grit Conditions

in snow-ice, becoming much less effective) should be addressed in further research. Front wheels typically available with manual wheelchairs are not appropriate for soft-snow conditions.

#### **10.10 Globalising accessibility: drawing on the experiences of developed countries to enable the participation of disabled people in Zambia<sup>69</sup>**

This paper explored the accessibility situation in a developing country such as Zambia. The global view of accessibility for disabled people is provided to examine the accessibility situation in developed and developing countries, highlighting the role of the environment in achieving rights for disabled people. Recognition of disability rights relating to accessible built environments is a necessary element to ensure their participation. Limited disability research, lack of disability policies and systems, evaluation of disability rights and support from developed countries have been cited as contributing to the non-recognition of disability rights and low participation by disabled people in Africa. An international perspective of disability, accessibility and participation and the experiences of developed countries are examined and their potential for advancing accessible built environments for participation in developing countries considered. However, accessibility concepts, having been developed in western countries, are presented with caution acknowledging the geographical, social-cultural and economic differences that exist.

#### **10.11 Participation-based environment accessibility assessment tool (P-BEAAT) in the Zambian context<sup>70</sup>**

The purpose of this study was to describe the preliminary development and validation of a potential measure for assessing the accessibility of the built environment in Zambia. It was designed to identify environmental features that present barriers to participation for people with mobility limitations (PWML) using mobility devices such as wheelchairs or crutches. The Participation-Based Environment Accessibility Assessment Tool (P-BEAAT) was developed through focus group discussions and personal interviews with 88 PWML from five provinces of Zambia regarding the accessibility of their built environment. The content validity of the P-BEAAT checklist was accomplished through three phases of development with data gathered from 11 focus groups and nine personal interviews. Results: Participants described accessibility barriers which affect their participation in daily life. This information generated the P-BEAAT with 66 items describing eight environmental features with potential for identifying environmental barriers. The P-BEAAT has shown good homogeneity with Cronbach's  $\alpha$  score of 0.91. Conclusion: The P-BEAAT was constructed grounded in the reality of people's experiences in Zambia for use in assessing environmental features important in the participation of daily life of PWML pertinent to developing countries. Further clinimetric testing of the properties of the P-BEAAT to establish reliability should be conducted next.

#### **Implications for Rehabilitation**

- Identification of barriers in the built environment is a critical element in the process of eliminating obstacles to participation by people with mobility limitations.
- Accessible built environment facilitates the enhancement of participation of people with mobility limitations.
- The process of identifying obstacles requires audit/assessment tools to evaluate and measure the presence or absence of barriers to accessibility of the built environment.

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<sup>69</sup> Martha Banda-Chalwea, Jennifer C. Nitza & Desleigh de Jongeb. 2012. Disability and Rehabilitation Volume 34, Issue 14,

<sup>70</sup> Martha Banda-Chalwe\*a, Jennifer C. Nitza & Desleigh de Jongeb

- This study shows that the Participation-Based Environment Accessibility Assessment Tool provides a preliminary checklist to be used in identifying environmental barriers in the process of promoting lifelong participation for people with mobility limitations using wheelchairs or crutches in Zambia.

#### **10.12 Building Managers' Perception in Regards to Accessibility and Universal Design Implementation in Public Buildings: Putrajaya case studies<sup>71</sup>**

Madam Campus Rector, this one was in Malaysia. This paper discusses the interview part of data collection, of an in-progress research on universal design implementation in public buildings, in Putrajaya. Main issues include public awareness of PWD rights and the true concepts of universal design. Main purposes were to investigate the level of awareness and perception of building managers regarding current and future plan of building's accessibility, and to study their knowledge on universal design theory. Semi-structured interview was carried out with building managers from three public buildings in Putrajaya. The findings show that the precise knowledge of universal design needs to be enhanced among the building managers

#### **10.13 Availability of hamburger restaurants for people in wheelchairs: an observational study<sup>72</sup>**

Availability and the right to participate in society, regardless of disability or not, should be equal for all individuals. The government has set targets to eliminate easily remedied obstacles before the end of 2010, which has now passed. The aim of the study was to describe the availability of hamburger restaurants for people in wheelchairs as well as examine the extent to which easily eliminated obstacles and other barriers exist. The investigation used a checklist to assess seven hamburger restaurants in a medium sized town in Sweden. Assessment areas were Admission, Vertical displacement Stair / Ramp, room and space, Toilet useful for people in wheelchairs, Order Disk, Signage and Interior. The checklist was worked up from an already existing from the Authority Handisam and guidelines from the National Board of Housing. The checklist was to consist of 104 total evaluation points. To get clearer overview of the different types of obstacles and see whether the government and parliament have been attained distinguished easily remedied obstacles from the other obstacles. The results show that the aim of removing all easily remedied obstacles before the end of 2010 is not fulfilled and that the other shortcomings in accessibility still exist. Total identified 145 barriers in all premises of which 27 were easily remedied obstacles, and 113 were other obstacles. The assessment areas that had the most obstacles were Toilet useful for people in wheelchairs, Order Disk and entrance. All the restaurants had barriers in almost all bedömningsområden. Slutsatsen in the study is that accessibility work must continue, and that a simpler and more understandable template for inventory of public buildings can help owners make available their premises.

#### **10.14 Wheelchair users as consumers: accessibility of supermarkets in Gaborone, Botswana<sup>73</sup>**

Even though some accessibility standards have been set in Botswana to create accessible public buildings including supermarkets by wheelchair users, architectural barriers are still found in these places. The purpose of the study was to assess the interior and exterior accessibility of supermarkets by wheelchair users including determining their shopping

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<sup>71</sup> Syazwani Abdul Kadir , Mariam Jamaludinb & Asiah Abdul Rahimc

<sup>72</sup> Sweden

<sup>73</sup> Gertrude R. Mafatlane, Lily C. Fidzani and Kesitegile S.M. Gobotswang 2015. International Journal of Consumer Studies Volume 39, Issue 2, pages 94–100,

experiences. The research used a mixed model study design in which data were collected using an observation checklist to assess 30 supermarkets alongside in-depth interviews with six wheelchair users. The quantitative data were analysed using the computer software Statistical Packages for Social Sciences 19.0 and qualitative data were grouped into emerging themes. The findings indicated that in the exterior, all supermarkets did not have directional arrows to the disabled parking. However, all the supermarkets had an accessible wide entrance and suitable non-slippery flooring. The interior revealed that all supermarkets did not have appropriate devices to assist wheelchair users to pick items from higher shelves and in some supermarkets, till counters were high for wheelchair users. From the interviews, the emerging themes were loss of freedom to shop, poor maintenance for disability facilities and disregard for disability parking spaces. In conclusion, while supermarkets had made some provision for wheelchair users from the parking lot to the entrance, there was less accessibility inside the supermarkets. There is need for an Act in Botswana that will ensure accessibility of public spaces.

#### ***10.15 Impact of inaccessible spaces on community participation of people with mobility limitations in Zambia: original research<sup>74</sup>***

The study investigated the perspective of people with mobility limitations (PWML) in Zambia, firstly of their accessibility to public buildings and spaces, and secondly of how their capacity to participate in a preferred lifestyle has been affected. Firstly to provide insight into the participation experiences of PWML in the social, cultural, economic, political and civic life areas and the relationship of these with disability in Zambia. Secondly to establish how the Zambian disability context shape the experiences of participation by PWML. A qualitative design was used to gather data from 75 PWML in five of the nine provinces of Zambia. Focus group discussions and personal interviews were used to examine the accessibility of the built environment and how this impacted on the whole family's participation experiences. The nominal group technique was utilised to rank inaccessible buildings and facilities which posed barriers to opportunities in life areas and how this interfered with the **whole family's lifestyle**. Inaccessibility of education institutions, workplaces and spaces have contributed to reduced participation with negative implications for personal, family, social and economic aspects of the lives of participants. Government buildings, service buildings, and transportation were universally identified as most important but least accessible.

Zambians with mobility limitations have been disadvantaged in accessing services and facilities provided to the public, depriving them and their dependants of full and equitable life participation because of reduced economic capacity. This study will assist in informing government of the need to improve environmental access to enable equal rights for all citizens.

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<sup>74</sup> Banda-Chalwe, Martha N, Jennifer C, De Jonge, Desleigh 2014. Impact of inaccessible spaces on community participation of people with mobility limitations in Zambia : original research African Journal of Disability. Vol 3 Issue Number Issue 1 Pages 1-17

### **10.16 Wheelchair accessibility: descriptive study of intersections in an urban area<sup>75</sup>**

Architectural barriers in public settings reduce accessibility for those with disabilities. This diminishes community participation, ability for independent living, and equality of opportunity. City street corners are commonly used areas for pedestrian traffic, but little research has been done to determine their level of accessibility for people with disabilities. The objective of this study is to determine the level of wheelchair accessibility at a sample of street corners in the Halifax region. Seventy nine pedestrian ramps were investigated and the characteristics of the ramps were collected. These included ramp width, ramp slope, height of the lip, and slope of the road leading up to the ramp. Each ramp was also graded for accessibility with a 3-point scale based on access to the crosswalk, presence of potholes or large cracks, and presence of drainage grates. Only 2.5 per cent of the ramps met all of the four measures and the three accessibility criteria. The results of this study demonstrated failure to fully meet accessibility standards. This suggests the need for better compliance, but also increased training of the wheelchair skills necessary for wheelchair users to overcome these architectural barriers. Monograph Title: Canadian Multidisciplinary Road Safety Conference XVII, June 3-6, 2007, Montreal,

### **10.17 Acessibilidade de um Centro de Treinamento Esportivo para Usuários de Cadeira de Rodas<sup>76</sup>**

The conditions of access for wheelchair users to the area of sports training at the Center for Physical Education and Sports of the Londrina State University was assessed. For assessment of the accessibility of the area, it was created a data collection tool based on the national standards for wheelchair accessibility from “NBR 9050 - Accessibility to buildings, furniture, equipment and urban spaces” of the Brazilian Association of Technical Standards.

32 observation points were selected, measurements were made using a metric tape measure 8 meters, and image records using camera were made. Of the 32 points assessed, 21 (65.6%) were not in accordance with the accessibility standards of NBR9050, and only 11 (34.4%) were adequate. The Center for Physical Education and Sports of the Londrina State University does not provide appropriate conditions for access to the person using a wheelchair. The daily presence of wheelchair users who use the area for sports training justifies the need to reduce architectural barriers and promoting full access to all. The reduction of such barriers would promote greater independence and integration of people who use wheelchairs for locomotion.

### **10.18 Assessing the disability inclusiveness of buildings<sup>77</sup>**

With rights to access now become basic human rights, it demands a tool for building disability inclusiveness assessment to tell how far we have gone to include persons with disabilities (PWDs) in buildings. Calling for more researches in disability inclusive facilities and inclusive education in various international conventions and statements such as the UN Convention on the Rights of Persons with Disabilities (2006) and the UNESCO Salamanca Statement (1994), the Physical Disability Inclusion Sub-score (PDIS) and the Visual Impairment Inclusion Sub-score (VIIS) as simple, quantitative and more objective tools for assessing higher education buildings were developed here. Other than that whether building professionals have knowledge of the way PWDs access and use buildings were at the same time examined.

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<sup>75</sup> Canada Wheelchair accessibility: descriptive study of intersections in an urban area

<sup>76</sup> Acessibilidade de um Centro de Treinamento Esportivo para Usuários de Cadeira de Rodas

<sup>77</sup> Lau, Wai-kin 2014. Degree Doctor of Philosophy. Assessing the disability inclusiveness of buildings

This study consists of four parts with (1) conception, (2) the PDIS and the VIIS for assessing the disability inclusiveness of buildings, (3) main survey and (4) conclusion. By way of literature review, the PDIS and the VIIS frameworks were constructed and they were fine-tuned with inputs from building professionals and users with impairments in the pilot phase. NSFDS but not the far more popular AHP was applied to weight the elements under the PDIS and the VIIS for both credibility and practicality reasons. In all, between March and July 2012, 20 building professionals, 22 persons with physical disability and 21 persons with visual impairment were surveyed. The PDIS and the VIIS then developed were much simplified with around 200 items under about 20 categories. Design was weighed by all to be more important than Management. Following that 48 higher education buildings from four universities in Hong Kong were assessed in March to September 2013. The dispersal of the PDIS and the VIIS were found largely due to Design rather than Management. In the disability inclusion performance of different categories, Operations and Maintenance, and Management Approaches were respectively the best and the least well performed categories, and Vertical Circulation and Entrance were the more disability inclusive Design categories.

As for hypothesis testing, 13 working hypotheses were developed from 4 main hypotheses. By Spearman's rank correlation test or the t-test, it was found that building professionals and both persons with physical disability and persons with visual impairment did not weigh the elements under the PDIS and the VIIS differently, and the mean values of the standard deviation of the weightings given by users with impairments were not greater than those given by building professionals. It is evidenced that building professionals somehow have knowledge of the way the physically impaired and the visually impaired access and use buildings, and impaired users are not biased on their experience. Having the PDIS and the VIIS developed, it is in pole position to adjust and apply them to study other buildings such as health care facilities and office buildings. Towards a more progressively aggressive step is to make changes to them to examine the more complex issue of ageing friendliness of buildings for the grey population following WHO Age-friendly Environments Programme.

### **10.19 Exploration des cadres de construction des rampes d'accessibilité<sup>78</sup>**

Accessibility to buildings promotes social participation through the application of inclusive design. However, architectural frameworks for constructing accessibility ramps are based on scant scientific evidence. This article presents a statement of established standards for construction criteria for accessibility ramps and makes recommendations from the perspective of inclusive design. A literature review was performed using the databases Medline, OTseeker, PsycINFO, and CINAHL (2000 to 2013), combining keywords referring to: universal accessibility, inclusive design, accessibility ramps, biomechanics, obesity, and disabilities. Non-scientific literature was also explored (e.g. building codes). The fifty-eight articles selected were grouped under five themes: 1) ramps and users; 2) materials and climate; 3) visual reference; 4) "way finding"; 5) durability, aesthetics and culture. Recommendations encouraging interdisciplinary practice, pegged to inclusive design, are exhibited (e.g. tracking, tilt, contrast).

### **10.20 Development and Assessment of Evaluation Indicators for Swimming Pool Accessibility<sup>79</sup>**

Many studies have shown that swimming is beneficial for people with disabilities and the elderly. However, thus far, it seems to have been no studies on swimming pool accessibility. The purpose of the present study, therefore, was to establish the first instrument measuring swimming pool accessibility and to take physical examination on swimming pools in Kaohsiung city as a sample to realize the current accessible level. Methods: A self-designed

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<sup>78</sup> Exploration des cadres de construction des rampes d'accessibilité

<sup>79</sup> Ya-Wen Hsu, Sheng-Kuang Wu, (Chia-Liang Tsai)

checklist revised through expert validation and a pilot study was used to examine the accessible level of swimming pools. By a comprehensive review of regulations of barrier-free environment and other related literatures, evaluation indicators in the checklist were based on four priorities as accessibility examination and improvement, and the graded scales in the checklist were classified according to a variety of levels and different types of impairments. Fourteen government-based swimming pools and eight privately owned and operated swimming pools in Kaohsiung city were investigated with the convenient sampling me...

### **10.21 Wheelchair accessibility of public buildings: a study in Greece<sup>80</sup>.**

Accessibility is the democratic right to move about freely and act in society for all people, even for people with disabilities. According to Greek legislation ought private and government supported public buildings to be accessible for people with disabilities. The purpose of this study is to examine the wheelchair accessibility of public buildings in a defined geographical area in Greece. The study group consisted of 14 public buildings. A checklist was constructed on the basis of the Greek checklist which can be used to examine the accessibility of public buildings containing the following assessment areas: walkway that leads to the entrance, entrance, entrance hall and other public spaces in the building, corridors, interior doors, ramps, elevators and toilets/hygiene rooms. The results revealed accessibility problems, such problems were mainly observed in the areas ramps, elevators and toilets/hygiene rooms. None of the public buildings was 100% accessible. Consulting occupational therapists when planning and designing the physical environment could diminish accessibility problems and promote health and well-being for all

## **11 Quality of Life, Societal Integration and workplace ergonomics**

As a measure of the ability to integrate into the society and effectively carry out activities of daily living, quality of life of everyone including person with impairment should be assessed as a measure of improvement. We assessed the impact of physiotherapy on HRQoL of patient with arthritis. The design of this study was a prospective survey design. The Eurool tool was used to collect data. The participants in this study were 32 patients attending arthritis clinic in a Soshanguve district clinic of Pretoria North of South Africa. The outcome of this study revealed that there was no significant impact of physiotherapy on all domains of HRQoL (mobility (p=1.00), self-care (p=0.37), usual activity (p=0.48), pain (p=0.06), anxiety or depression (p=0.20) and health state (p=0.28). While on the other hand there was a significant effect on the best imaginable health state (p=0.0001). Though there was no statistical significance of the impact of physiotherapy in all domains there was however improvement in the state of health within the different domains<sup>81</sup>

As workers in health care, we are not immuned to impairment of structures and other work related injuries; if we adopt disabling lifestyles. We conducted the first study amongst physiotherapists in sub-Saharan Africa in an epidemiological study of work-related low back pain among physiotherapists in Zimbabwe. <sup>82</sup>Forty percent of 107 physiotherapists surveyed experienced work-related low back pain. More female than male respondents reported

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<sup>80</sup> Sofianou, G. Wheelchair accessibility of public buildings. A study in Greece

<sup>81</sup> Useh U and Boilane M (2011). Assessment of the impact of Physiotherapy on Health Related Quality of Life (HRQoL) of patient with arthritis in a Clinic in Pretoria Area of South Africa. *Journal of Social Sciences*.29 (1):17-21

<sup>82</sup> Igumbor, EI, Useh U, Madzivire D (2003). An epidemiological study of work-related low back pain among physiotherapists in Zimbabwe. *South Africa Journal of Physiotherapy*, vol 59, no 3: 7-14



experiencing LBP and most commonly, symptoms first occurred within the first 5 years of practice. Therapists working in Rehabilitation centers, private clinics and general hospital settings recorded a higher occurrence of work-related LBP those in academia and special schools. Lifting and transferring patients was the single most important perceived risk factor for developing WRLBP. Occurrence and severity are similar to those reported from developed countries and the nursing profession. It is suggested that provision of hoists and other handling equipment be provided.

A study in work-related Musculoskeletal Disorders among Physiotherapists<sup>83</sup> also revealed that one in four physiotherapists took sick leave or required treatment because of WMSDs. Younger physiotherapists reported higher prevalence of symptoms in the upper back, thumb, wrists, hands and neck. The job-factor rated most likely to contribute to WMSDs was “lifting or transferring dependent patients”. Use of manual therapy techniques were significantly related to increased prevalence of thumb, wrists and hand symptoms.

The high prevalence of low back injuries and the increase of symptoms in the joint of the upper limbs require further investigation. More modern equipment should be purchased and therapists employed to overcome the present heavy workloads in the hospitals and clinics. Further research should be directed at preventing WMSDs amongst physiotherapists.

I studied employees working postures and its ergonomic implications in a University setting.<sup>84</sup> Posture at work has been known to affect production and output. Working ergonomics is the study of the relation between the employee and the physical work environment aimed at creating a safe and a comfortable environment and enhancing productivity. The principles of ergonomics dictate that imbalances between the person and his or her environment must be eliminated, and the balance maintained. This is known as the person-environment (P-E) fit.<sup>85</sup> So many factors could affect his or her fit and result in imbalance and therefore affects productivity at work. In industrial workstation design, the primary concern has usually been the improvement of the performance of the equipment alone. Little consideration is given towards matching the abilities of the operator with the task requirement. Consequently, many industrial workstations are poorly designed, resulting in lost worker productivity and unnecessary injury at workplace. One of such problems that are seldom evaluated is the posture assumed during working. There is anecdotal evidence of pain amongst staff at the University, however the risk and causes of this is yet to be investigated.

This study assessed the risk of back and neck pain and its ergonomic implications on workers in a University setting in South Africa. Study method: The designs for this study were both cross-sectional descriptive survey and observational study. Subjects: A total of 53 academic and administrative employees participated in this study. Results: The mean age  $\pm$  SD of participants was  $46.45 \pm 8.31$ . The minimum age was 32 and maximum was 64 years old. About 71% of the female participants were at a high risk of sustaining back injuries. There was however no significant association between gender of participant and risk of sustaining back injury ( $p= 0.87$ ). Administrators recorded the highest level of high risk of sustaining back injury, while lectures reported the highest level of medium risk of sustaining back pain at work. About 53% of respondent fall within the medium level of risk, another 26% were within the high level of risk. Administrators presented within the highest risk level of 41.2% in sustaining back injury. There was also no significant relationship between jobs and risk of sustaining back injuries ( $p=0.382$ ). Conclusions and Recommendations: More females presented with medium to high risk of sustaining back injuries. Overall, the risk of sustaining back and neck pain amongst university employees was found to be medium to

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<sup>83</sup> Useh U, Igumbor, EI, Madzivire D (2003). Occupational injuries amongst physiotherapists: a case study in Zimbabwe. *Journal of African Safety Promotion*, vol 1, no2:26-33

<sup>84</sup> Useh U (2014). *Employees Working Postures and its Ergonomic Implications in a University Setting*. *The Anthropologist*, 17(2): 473-479.

<sup>85</sup> Nel, Werner, Haasbroek, Poisat, Sono, & Schultz, 2008

high. Gender was found to have no significant influence on the risk of sustaining back and neck injuries. Low back pain was also found to be common across the jobs, with administrators presenting higher risk by disciplines.

Similar work was also conducted in a school in Pretoria by Useh and others.<sup>86</sup> The risk of developing back and neck pain was investigated amongst 84 learners in a high school in Pretoria, South Africa. The design of this study was a cross sectional descriptive study. Ninety percent of the participants reported a high risk of developing neck pain. The findings of the study revealed that there is a high risk of back pain at age 14 (100%), with females (94%) at higher risk than their male (84%) counterparts. There was a significant association between age and risk of back pain ( $p = 0.019$ ). No significant association between neck pain and age, gender, and hand dominance ( $p = 0.670$ ;  $p = 0.286$ ;  $p = 0.542$  respectively), upper back pain and age, gender and hand dominance ( $p = 0.904$ ;  $p = 0.608$ ;  $p = 0.500$  respectively), and lower back pain and age, gender and hand dominance ( $p = 0.176$ ;  $p = 0.473$ ;  $p = 0.675$  respectively). The prevalence of neck pain was found to be 35%.

## 12. Our research at North West University on Nursing Education

Madam Rector, the following are my contributions to Inter-professional Education:

12.1 Rakhudu MA, **Useh U** & Maselesele M (2012). Inter and Intraprofessional collaboration in the implementation of Problem Based-Learning in Nursing Education: Lesson for South Africa. *Life Science Journal* 2012;9:4:344-352.

12.2 **Useh U**, Mosebudi D, Tsolo G, Kgwakgwa D.K (2012). Comparison of competences between Problem-Based Learning (PBL) and Non-Problem-Based graduate nurses in a Provincial Hospital in South Africa. *Life Science Journal* 2012;9:3:2512-2517

12.3 Kaphagawani N C and **Useh U** (2013). Analysis of nursing students learning experiences in clinical practice. Literature review. *Ethno-Medicine*, 7(3): 181-185.<sup>87</sup> This one has been used and cited in Philippines<sup>88</sup>, Italy<sup>89</sup>, Universities of Western Cape<sup>90</sup> and Stellenbosch<sup>91</sup> in South Africa.

## 13 Future research

The direction of future research of my team shall include the following:

13.1 Evidenced based community centred physical activities (PA) on quality of life (QoL), health related fitness parameters (HRFP) and CD4 counts amongst people living with

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<sup>86</sup> Useh U, Kotsokoane F. M, Masenya L.P (2011). Postural analysis of risk of neck and low back pain of adolescents in a high school in Pretoria, South Africa. *Life Science Journal* 2011;8 (S1) 19-23

<sup>87</sup> Kaphagawani N C and Useh U (2013). Analysis of nursing students learning experiences in clinical practice. Literature review. *Ethno-Medicine*, 7(3): 181-185.

<sup>88</sup> Wa-Mbaleka, S and Stella Appiah S 2015 Preparedness of Nursing International Students for their Clinical Learning in the Philippines. *International Journal of Academic Research in Business and Social Sciences* March 2015, Vol. 5, No. 3 :101-118

<sup>89</sup> Dante, A & Fabris, S & Palese, A 2015. Predictive Power of Individual Factors and Clinical Learning Experience on Academic Success: Findings From a Longitudinal Study. *Nurse Educator* Vol. 40, No. 3, pp. E1-E6

<sup>90</sup> Buthelezi S 2014 Clinical learning experiences of university male student nurses during their placement in a clinical setting

<sup>91</sup> Borrageiro F 2014. Clinical Learning Environment and Supervision: Student Nurses' experiences within private health care settings in the Western Cape

HIV and AIDS in selected rural African communities in North West, Gauteng and Limpopo Provinces.

13.2 Non-invasive Inter-professional approaches in Lifestyle Diseases in North West Province.

13.3 Effect of Inter-professional care (IPC) on persons living with HIV and AIDS in selected rural African communities in Gauteng and North West Provinces of South Africa

## **14 Conclusion**

Madam Rector, the disabling impact of diseases of lifestyles on self is by no means a task for everyone. There is also a minimal doubt that nexus between the society and self in the healing continuum exists. With great humility therefore, I dedicated my academic career to the service of humanity towards finding solutions to the disabling effect of diseases of lifestyle in our community, I so **profess**. My role in the Niche Area on Diseases of Lifestyle shall be to create an enabling Inter-professional educational care and education this sole purpose.

Thank you all for listening.

### **About Ushotanefe Useh**

Is a professor and Director of Research and Postgraduate Studies, at the Faculty of Agriculture Science and Technology. He is also the Coordinator of Lifestyle Diseases Niche Area North West University, Mafikeng Campus, South Africa. A Fellow of the Higher Education Academy (United Kingdom), Member of Society of Research Administrators International, United States of America. He is an educator, a physiotherapist and a registered member of different professional organisations. Prior to joining the North West University, he has practised and lectured physiotherapy in three different continents; amongst these are the University of Ibadan, Nigeria, King Fahd Hospital of the University, Alkhobar, Saudi Arabia, University of Zimbabwe, Harare, Zimbabwe, Universities of Venda and Limpopo (MEDUNSA), in South Africa, University of Plymouth, England, United Kingdom. His university community duties also include, the chairperson Health Ethics Committee, North-West University, Mafikeng Campus.

His research areas are: Physiotherapy, Disability, Inter-professional Care and Health Education; and Non-Communicable Diseases.

'Efe was born in the ancient and historical city of Benin in Nigeria. He is of the Urhobo tribe from Uwherun village, Delta State of Nigeria. His primary schools were at the Arinze Primary School Benin City, Army Children Ikeja, Lagos; his post primary schools were at the Apostolic Church Grammar School Lagos, and St Anthony's Secondary School Ilorin, Kwara State, Nigeria where he completed his GCE Ordinary Level qualification with a Division One. His GCE Advanced level was in 1980 at the Federal School of Arts and Science, Victoria Island, Lagos Nigeria and his Bachelor of Sciences (Hons) degree in physiotherapy from the University of Ibadan Nigeria in 1983, Master's Degree in Exercise physiology from the same University in 1995 and PhD from the University of Venda, South Africa in 2005.

His teaching qualifications were from the University of Plymouth, England, United Kingdom in 2007. He has published over 50 journal articles in peer review journals in his chosen discipline.

### **Professional recognition**

1. World Health Organization (WHO), 1999: Participated in the revision of the International Classification of Functioning and Disability (ICIDH-2) for evaluation disability.
2. International Council of Sports Science and Physical Education (ICSSPE) 1996: One the ten sports scientist awarded scholarship by the International Council of Sports Science and Physical Education (ICSSPE) to attend the pre-Olympic scientific congress in Dallas, United States of America.
3. Center for International Rehabilitation Research Information and Exchange (CIRRIE) Listed by the Center for International Rehabilitation Research Information and Exchange (CIRRIE) database for authors in disability research.  
Special Interest: Sports physiotherapy, Cardiopulmonary, Rehabilitation and Disability issues.
4. Member of the Editorial review board of the about three accredited journals

### **REGISTRATION/ AFFILIATION AND MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS**

2015: Member of Society of Research Administrators International, United States of America

2015. Member of Critical Care Society, South Africa

2010: Member South African Association of Health Educationist (SAHEE).

2010. Member South African Society of Physiotherapy

2005: Member Chartered Society of Physiotherapy, United Kingdom

2007. Fellow Higher Education Academy, United Kingdom

2003: Registered with the Health Professions Council of South Africa (physiotherapist)  
PT0082201

2003: Member, Physiotherapy Pain Association of London

1990: Registered Physiotherapist with Health Professions Council, London, United Kingdom

1983: Member of the Nigerian Society of Physiotherapy.

