***IQRa NATIONAL UNIVERSITY***

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***assingmentt: research proposal***

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**Research proposal**

**ASSOCIATION BETWEEN BODY MASS INDEX AND POSTURAL STABILITY IN ADULTS USING BIODEX BALANCE SYSTEM ; A CROSS SECTIONAL SURVEY**

**Introduction**

Balance is often used as a broad term in daily living and serves as a pillar of stability(1). It can be defined as an ability of body to keep the center of mass within base of support during both static and dynamic conditions. Balance requires constant adjustment to keep the body in equilibrium(2, 3).A complex system is involved in maintaining postural control having three basic components. It includes vestibular, visual and somatosensory system providing information to sustain balance. Aside from that,ankle,hip and stepping strategies are also used to resist against perturbations. These strategies improve stability by regulating center of mass within available base of support(2).Balance deficit is a rising public health concern as falls are strongly associated to it(4).Several factors can add to postural instability e.g. neurological and musculoskeletal problems, Vestibular problems, and body mass index being one of them(4). Fregyl et al were the first to identify the relationship between body weight and postural control(5). People with higher BMI cannot utilize somatosensory information because their plantar mechanoreceptors are deficit due to consistent pressure of supporting large mass(6). Also, additional considerations are required for controlling posture(7).

e.In 2014 WHO reported 11% adult males are obese and 38% are overweight.Many health related issues are concerned to higher BMI(8). It was reported that higher BMI decreases balance stability as use of proprioceptive information is insufficient in such individuals(9). Postural sway increase both in magnitude and velocity with increasing weight(1). Teasdale in their study established that weight reduction can help in improving balance control(10). In contrary,Januszet.al reported that balance is improved by increasing the body weight and less sway is observed(5).

Unfortunately, In Pakistan limited studies have been conducted assessing relationship between postural stability and BMI. We want to assess this association and to create awareness among individuals and clinicians to take into account the importance of postural stability to prevent risk of fall and injury in elderly age. Weight management programme and balance training must be brought under Study Design:-

Cross sectional survey

Study Settings:

Physical therapy department of Rehman medical institute Peshawar( Academic and clinical)

Study Duration:-

6 months

Sample Size:

212

Sampling Technique:

Census Inclusion Criteria:

1: Adults (Clinical and Academic) of physical therapy department Rehman medical institute.

Exclusion Criteria:

1. Adults with Vestibular and balance disorders, stroke, cardiovascular diseases, diabetes, neuropathy, knee/ankle stability, muscle tone and sensation disturbance, metabolic bone diseases, malignancy, musculoskeletal disorders, any surgery, use of assistive device, and those individuals who require more than three attempts on Biodex balance system.(3)