Abstract

Background of study:

The foot is a complex structure at the most distal segment of the body. It plays a major role in altering the center of gravity maintaining static and dynamic postural stability (PS). A good postural stability is crucial in prevention of falls. It also determines the performance of athletes in sports which required high level of balance.

Objectives:

The main purpose of our study is to measure the variation of the subtalar joint neutral (SJN) angle in non-weight bearing (NWB) position among Malaysian youth population and the relationship between SJN angle in NWB position on static and dynamic PS among Malaysian youth population.

Methodology:

Participants (n = 216) between 15 to 24 years were recruited via convenience sampling. They were required to fill in their details in the participants data form followed by their SJN angle were measured in NWB position and RFA measured in relax bilateral stance position. A balance error scoring system (BESS) were used to assess their static balance and star excursion balance test (SEBT) were used to measure their dynamic balance. The data obtained were interpreted using SPSS version 21 software.

Results:

The mean SJN angle in the Malaysian youth is 1.19° varus with a standard deviation (SD) of ±3.751°. No significant relationship found between the SJN angle and the relax rearfoot angle. There were significant negative correlations between the SJN angle to dynamic balance on medial, posterior, lateral, anterolateral, and posteromedial direction. There were no significant correlations between the SJN angle to the other direction.

Conclusion:

The normal range for the SJN angle in NWB position among the general Malaysian youth population is approximately 3° valgus to 5° varus. Participants with a more valgus SJN angle have more dynamic stability on medial, posterior, lateral, anterolateral, and posteromedial direction.