Athletes normally engage in an essential routine what generally known as "warm-up" prior to performing any physical activity [1]. Warming up precedes most athletic events because it is believed to prevent injury and assist in performance enhancement [2,9,10,11].

When at rest, blood circulation pooled at the center or core of our body limiting blood circulations to other parts of our body. Scientists and coaches believed that warm-up will potentially increase nerve conduction rate, increase muscle temperature, assist in oxygen transportation through increase blood circulation, decrease viscous resistance and stiffness [3,12].

In general, active warm-ups divided into four different categories: "cardio-based" (e.g., running), "muscular-based" (e.g., strength exercises), passive or active "stretching"; and "specific" (resembling activity to be performed)[4]. In contrast, Burkett et al. [5] divided warm-up into specific and a non-specific techniques of warm-up. The non-specific technique involves movements not directly related to the actual activity to be performed and vice versa.

According to Villarreal et al. [6], different types of warm-up might influences jumping performance. For instance, weight loading on certain intensities during warm-up actually influences athletes jumping performance. A study Girard et al. [4] specified two kinds of different warm-up to measure isometric knee extension function and compared the acute effect of two types warming up on vertical jump performance. These two warm-up protocols are defined as strength-based warm-up (SWU) and running-based warm-up (RWU). Strength-based warm-up (SWU) includes a series of weight loading, whereas the running-based (RWU) include different pace running routines. It was reported that SWU and RWU induced similar results in terms of increase in knee extensors force-generating capacity by improving the muscle activation [4]. In order to test this hypothesis, usually vertical jump test is administered to measure for "explosive leg" power produced during jumps[5].

The understanding on effects produced by different warm-up routine is vital because the choice of appropriate warm-up routine is critical to ensure successful sports performances such as volleyball, basketball, or high jump. It is also important to determine whether leg power output is a key component in athletic performance [7].