

Influence of special suites on enhancing the performance in power lifting

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ABSTRACT

The powerlifting is a discipline based on maximum muscular strength, the goal is to lift the heaviest loads on 3 movements which are the squat, the bench press, and the deadlift. To increase the performance the powerlifters use special suits like squat suite, bench press shirt, knee wrap, belt and other. To know the influence of these special gadgets on performance the study was conducted. 19 women national level power lifters raw and equipped powerlifting performance was compared with the suitable diagram and found significance difference in performance. The study concluded that the special suites are highly influence during the very high lift and it helps to avoid the injuries.

KEY WORDS: powerlifting, raw and equipped, squat, bench press shirt.

I. INTRODUCTION:

Powerlifting is a strength sport that consists of three attempts at maximal weight on three lifts: squat, bench press, and deadlift. As in the sport of Olympic weightlifting, it involves the athlete attempting a maximal weight single lift of a barbell loaded with weight plates.

Strength is the primary ingredient of athletic performance. Powerlifting's lifts are the definitive measure of strength. Powerlifting is the ultimate strength competition. The powerlifting athlete competes in three specific disciplines, each designed to measure different areas of human strength. The sum or total of the best lift in each discipline determines the winner. Powerlifting is an exciting sport where athletes compete against the force of iron as well as other athletes.

The three disciplines, in contest order, that make up the sport are the Squat, Bench press and Deadlift.

The powerlifting is a discipline based on maximum muscular strength, the goal is to lift the heaviest loads on 3 movements which are the squat, the bench press, and the deadlift. To achieve these 3 movements, athletes can use different equipment approved by International Powerlifting Federation such as shirts, belts, suits or wraps.

In powerlifting competition, lifts may be performed equipped or un-equipped (typically referred to as 'raw' lifting or 'classic' in the International Powerlifting Federation specifically). Equipment in this context refers to a supportive squat suit, knee wraps, bench press shirt, and deadlift suite or briefs. In some federations, knee wraps are permitted in the equipped but not un-equipped division; in others, they may be used in both equipped and un-equipped lifting. Weight belts, knee sleeves, wrist wraps and special footwear may also be used, but are not considered when distinguishing equipped from un-equipped lifting.

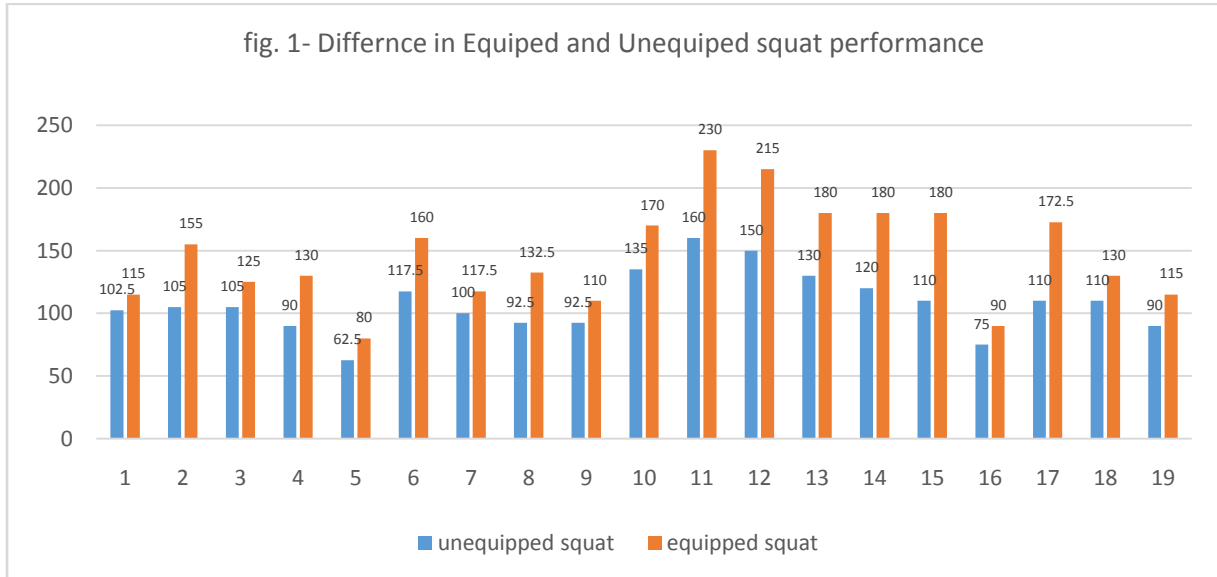
The investigator himself a powerlifter interested to study on the performance difference in equipped lifting and un-equipped power lifting.

II. METHODOLOGY

In this study the investigator compared the performance of national women power lifters who participated in the national championship. 19 women power lifters performance was compared. The power lifters performed in the both equipped and un-equipped tournaments in the same venue and same duration. The performance in squat, bench press, dead lift was separately compared.

Analysis

In the study investigator compared the squat and bench press performance between equipped and un-equipped powerlifters separately.

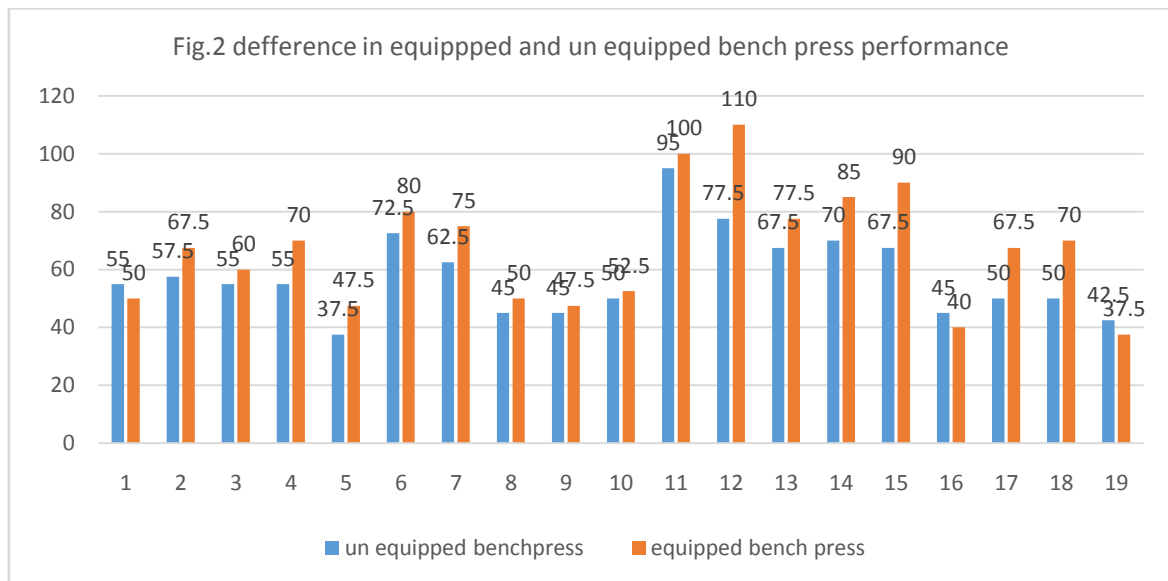


The comparison shows that the squat performance is higher in equipped powerlifting than unequipped powerlifting squat.

All the women powerlifters performed well using squat suite and knee wrap. Average 38.42 kg higher performance is recorded in women powerlifters in squat event using additional suites. It revealed the suites are more influence on increasing the strength during 1RM squat.

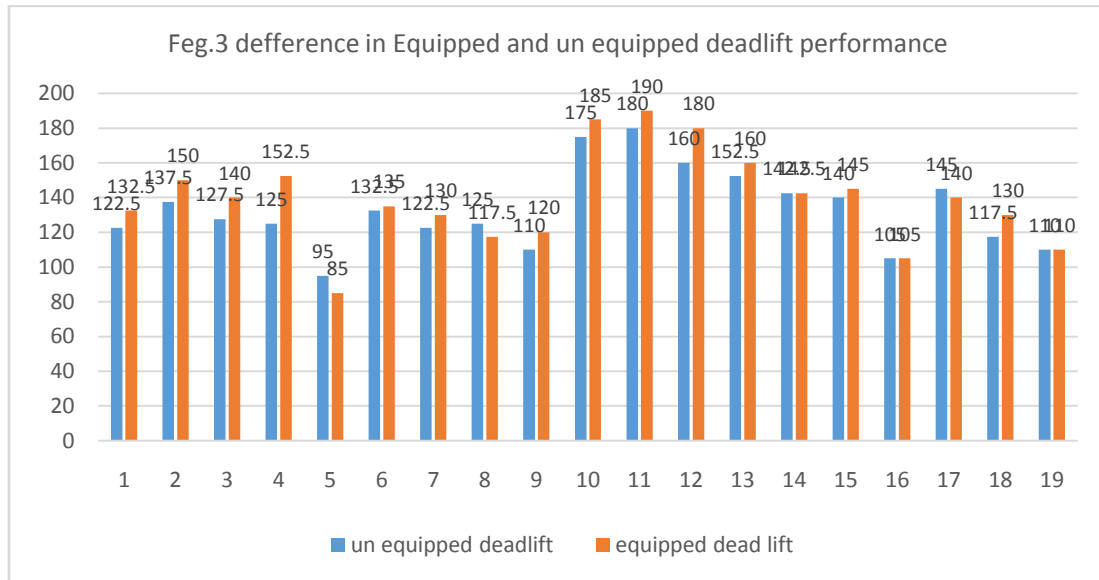
In the squat, suites made of stiff, heavy material that restricts the lifter's natural movements and helps the competitor to lift more weight. At the

bottom of the squat, the suit works like a compressed spring, helping the lifter in reverse direction. The energy stored in the fabric during the descent and that fabric stretches the more it will help the lifter in reverse direction. When the lifter squats forcefully the suit gets rebound effect and it helps the lifter get up easily. The suit also provides support to the lifter's back, abdomen, and "core" muscles, which must stay contracted to hold the body erect and thus carry the great weights lifted in "geared" powerlifting. (Jan Todd et.al. 2015)



The above table shows that the bench press performance is higher in equipped bench press than raw bench press. In this raw bench press the women powerlifter performance level is low as it is compared to bench press with equipped.

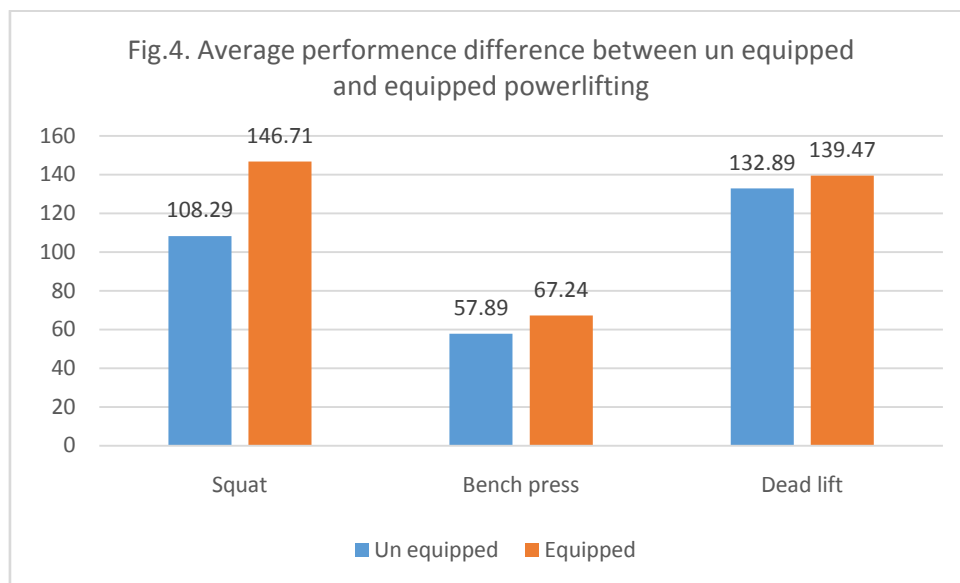
Average 9.35 kg higher performance is recorded in women powerlifters in bench press event using specialized suits. It revealed that suits are more influence on increasing the strength during 1RM bench press.



The above table shows that the dead lift performance is increased wearing special gadgets in deadlift during the competition. There was a significant

difference in performance of raw and equipped deadlift.

Fig. 4. Average performance of unequipped and equipped powerlifting



The above table shows the performance difference between unequipped and equipped powerlifting events. In squat event an average performance of the lifters in unequipped is

108.29kg and in equipped squat is 146.71kg. In this study it is learnt that using squat costume and knee band an average increase in performance is 38.42 kg where as in bench press costume and wrist band

it is found an average of 9.35kg and in dead lift it is 6.58 kg.

III. DISCUSSION:

Powerlifting is a measurement of power and maximum strength of individual in the form of squat, bench press and dead lift. Highest scorer in this three events is given the position. Therefore the competitor uses the special costumes to increase the performance. These suits are made out of single or multiple layers which are made from very tight material (polyester) with a tight fit to provide an extra tension. The squat suits acts to compress the body and keep the hips in proper alignment. And the knee band gives the additional support during the squat. Therefore the study shows that the same athlete is able to give higher performance in equipped squat than in and unequipped squat. The difference between the two is 38.42kg.

The greatest difference in strength gains is seen in the squat performance which indicates that the effects of blood flow restriction training is specific to the muscles involved in the movement. (Baton et al. 2012) It can be understood that these type of suits specially built for blood flow restriction. During the squat the squat suite restricts the blood flow of thigh muscles.

Knee wraps support the knee joint, gains a mechanical advantage during the back squat or to potentially lift greater loads.

And using the bench press costume and wrist band the same powerlifter performed an average of 9.35kg higher performance compare to unequipped bench press.

The bench press shirt is strongly stretched. During the descent of the bar, it has deformed and stored elastic potential energy that will be restored as kinetic energy, and therefore helps the athlete to raise the bar in the initial position.

In contrast, the Bench Press shirt, although quite restrictive, may not be sufficient to occlude blood flow to prime movers of the pectorals, triceps, and anterior deltoids during the Bench Press lift. In fact, the purpose of the Bench Press shirt is to assist the lifter during the eccentric phase of the lift, serving to give the lifter a “rebound” effect during the concentric phase. We suspect this action may not result in significant blood flow restriction to the working muscles. (Baton et al. 2012)

In dead lift average 6.5kg additional performance was found. It shows the significant gain in the powerlifting performance using special suites.

The Deadlift Specifically, the lifter must be able to achieve a neutral spine with shoulders

back and down at the start of the lift, which is made difficult with the use of an extremely tight suit.

The study also revealed that the lifter can perform higher weight in squat and bench press than deadlift. It indicates the special elasticity suites are more helpful in squat and bench press. And in deadlift the equipped and unequipped performance was not recorded high difference.

IV. CONCLUSION

Power lifting is a strength sport in which the maximum strength of the competitor is evaluated in the form of squat, bench press and deadlift. The strength is increased using squat suite, knee band and bench press suites in power lifting. Usually these special suits or bands provide very high elastic action naturally and in squat it supports the lifter in the beginning to stand after complete sitting. And in the bench press it helps the athlete to raise the bar in the initial position

These shirts are very tight and fit to the body therefore it restricts the blood flow in particular muscle when athlete wears it and increases the strength of the muscle. It results in increased performance of squat and bench press in powerlifting. They move massive amounts of weight in hi-tech supportive gear that protects against injury.

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