International Journal of Academic Research in Business and Social Sciences
2017, Vol. 7, No. 7
ISSN: 2222-6990

Assessment of Basic Fitness Related Performance Components between Three Essential Co-Curriculum Units of University Sultan Zainal Abidin Malaysia

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DOI: 10.6007/IJARBSS/v7-i7/3157 URL: http://dx.doi.org/10.6007/IJARBSS/v7-i7/3157

Abstract: Uniform arm units are set up to serve as the first line defence and to assist the university members for any emergency that might arise. To discharge their duties effectively, they need to meet up to the requirement of highest physical fitness level. This study aims to examine the physical fitness levels among armed uniform package unit of UniSZA and to investigate the components that distinguish their level of physical fitness. A total of 120 participants within the age range of (±20.45) male and (±20.63) female took part in this study 60 from each group. Standard physical fitness tests were conducted, and Multivariate Analysis of Variance (MANOVA) was used to analyse their performance on the physical fitness with the performance of physical fitness as the dependent variable (DV), while the categories of the uniform units as the independent variables (IV). Pairwise Comparison follow-up test was conducted to determine the significant parameters that differentiate the groups. The finding shows that there is a significant difference in the performance of physical fitness tests for both male and female $F(20, 98) = 1.68$, $p < 0.0001$. However, follow-up test shows that both male and female of PALAPES units have the most significant level of physical fitness among the uniform troops $p < 0.05$. The fitness standards of the other armed package units examined does not meet the optimum level. The trainers of these uniforms forces are recommended to improve their training programmes, and the types of physical activities perform during their training sessions.

Keywords: Physical fitness related performances, armed uniform package units, physical activities, Co-curriculum

INTRODUCTION

The Ministry of Health (2016) clarified that physical activity involves all body movements that use energy in everyday life such as work, recreation, exercise and sports. In distinction with physical activity, which is related to the movements accomplished by an individual, physical fitness is defined as a set of qualities that a person possesses or achieve. Physical fitness is related to the ability to perform physical activity. Being physically fit has been defined as the capacity to carry out daily tasks with preparedness and vigour, without extreme exhaustion and with sufficient energy to enjoy leisure-time pursuits and to meet unforeseen emergencies (Caspersen, Powell, and Christenson, 1985). The most frequently cited components are separated into two groups which are one related to health and the other related to motor skills that refer more to athletic ability (Pate, 1983). The health-related components of physical fitness are categorised as cardiorespiratory endurance, muscular endurance, muscular strength, body composition, and flexibility. Just as the sum of physical activity ranges from low to high, so does the level of physical fitness. Furthermore, the levels of the five health-related components usually differ in performance, for example, a person may be flexible but not strong. The five health-related modules of physical fitness are essential to community health than are the components related to athletic ability. The skill-related components of physical fitness are categorised as agility, balance, coordination, speed, and reaction time. These entire skill-related have always been used by previous researchers in their study. Agility is a skill-related element of physical fitness that relays to the ability rapidly to alter the location of the entire body in space with quickness and accurateness. Balance refers to the maintenance of equilibrium while stationary or moving. Coordination refers to the skill to use the senses, such as sight and hearing, together with body parts in performing motor tasks smoothly and accurately. Speed relates to the capacity to perform a movement within a short period of time. Reaction time refers to the time elapsed between stimulation and the beginning of the response to it. The possession of all the aforementioned components helps an individual to develop a sound mind in a healthy body.

Co-curriculum for university students is a major component, and it is mostly attached to the graduation requirements enshrined in students' rules and regulations guidebook. From the co-curriculum activity, students are giving a chance to integrate well with different racial backgrounds (Pettigrew, 1998). Till date, the co-curriculum activities have been proven to improving the students' academic performance. Guest and Schneider, (2008) noted that researchers had found a positive association between the co-curricular activities and the academic performance of the students. The co-curriculum activities make the students tough enough for the future time and develop a sense of competitive spirit, leadership, cooperation, diligence as well as serve as the backdrop for the development of their creative talents (Villalobos et al., 2016). Co-curriculum in the Universiti Sultan Zainal Abidin (UniSZA)'s perspective is a major component that students must have as the requirement for graduation. In UniSZA, there are a number of co-curriculum units to be selected by the undergraduate students which are culture core, community and volunteerism core, entrepreneurship and self-construction core, sports core, unarmed uniform unit core and armed uniform unit core

International Journal of Academic Research in Business and Social Sciences
2017, Vol. 7, No. 7
ISSN: 2222-6990

(Student's Holistic Development Centre, 2016). It is only through active participation in the co-curriculum activities that the students are considered to have fulfilled the graduation and commissioning requirements.

The Armed Uniform, Package Unit in UniSZA, plays a significant role in emergencies and also involved in producing good 'product' for university excellence. Ju Ariana Ibrahim, the winner of the Education Minister Award 2014 was also one of SUKSIS alumni from 2011 batch. SUKSIS **(**KKW 1021 – 1026) in UniSZA is a co-curriculum unit that is provided only for bachelor's degree students. The Royal Malaysian Police mission is to provide professional and quality services in protecting the country to ensure public safety, security and prosperity and their vision are foremost in maintaining a safe, secure and prosperous Malaysia (RMP, 2016). This course is aiming to produce Volunteer Police Officer with laws knowledge, attitudes and practices of the police discipline that correspond between police and UniSZA team. PALAPES (KKW 1032 – 1036) in UniSZA is a special Air Force military unit, which their primary bases in Gong Kedak Airbase. The ROTU Air Force mission is to defend the sovereignty and territorial integrity as well as its significance through the efficient use of air power while their vision is to become superior air power (Air Force, 2016). For PALAPES selection screening, candidates must fulfil the conditions given by the Board of Malaysian Armed Force (ATM). Training will begin after the candidates are successful in the screening tests conducted by PALAPES UDARA Headquarters (U) and the Reserve Force. This stage aims to expose students to the basic military training (theory and practice) and live in the camps (the Royal Malaysian Air Force). This course requires candidates to meet the conditions laid down by the Board of ATM elections. WATANIAH is the oldest uniform unit among these three units involved in this study, and since their establishment, they have concerned with the accreditation of diploma students only to become their trainees. This course is the pilot team for Malaysian Armed Force, and their mission is to defend the sovereignty and interests from external threats and help public authorities to achieve peace and prosperity (Army, 2015). This co-curriculum course also requires candidates to meet the conditions given by ATM selection unit. Training begins after the candidates are successful in the screening tests conducted by the Territorial Army (WATANIAH) and the Army Reserve Division. This stage aims to expose students to the basic military training (theory and practice) and life in the camp (Student's Holistic Development Centre, 2016). Trainee for this armed uniform package unit has to fulfil all the conditions required, and if they withdraw themselves from continuing the training, they are considered a fail.

The requirement for physical fitness components among arm forces is essential. Anderson, Plecas, and Segger, **(**2000) indicated that armed force in the world is faced with the schedules of shift-work and uneventful patrol to the physical responses and actions required in critical incidents. Furthermore, Cowell (1995) added that during recruiting process of police officers, failure to screen out candidates who cannot perform such responsibilities can result in long term disability, injury, poor productivity and rapid employee turnover, each having both economic and human cost. It is essential, therefore, to ensure that the uniform arm units are equipped with the necessary fitness to enable them to discharge their duties effectively. Based

on this background, therefore, the present study aims to examine the level of physical fitness related performance among the most famous uniform armed package units of University Sultan Zainal Abidin specifically SUKSIS, PALAPES, and WATANIAH.

MATERIALS AND METHODS

Participants

The population of this study comprises of three armed uniform package units of UniSZA's students who are active members from SUKSIS, PALAPES, and WATANIAH. A total of 120 trainees were recruited to participate in this study. The participants were active trainees comprising of 60 males and 60 females. Each armed uniform package unit provided 40 members consist of 20 males and 20 females respectively. The average age of the male participants is ± 20.45 years old while the average age of the female participants is ± 20.63 years old. The trainers and the management of each armed uniform package unit were informed about the purpose of the research.

Trainees Fitness Examination

Anthropometric Test: Standard anthropometric testing was conducted which constitutes of weight, height, waist circumference, and neck circumference. Standing height was measured with a wall-mounted wooden stadiometer to the nearest 0.5 cm. Body weight was evaluated with a standardised electronic digital scale to the nearest 0.01 kg. Waist circumference was measured by using the measurement tape to the nearest 0.1 cm. Neck circumference was measured by using the measurement tape to the nearest 0.1 cm. All the tests were executed in accordance with ISAK protocol (Marfell-Jones, Stewart, & de Ridder, 2012). The measurements were obtained twice, and the mean value was generated as the final score.

Muscular Strength: The test was executed according to the suggested method by prior researchers for physical fitness tests (Noguchi, Demura, & Takahashi, 2013). Troops lay on their back with their knees bowed at around right edges while both feet were situated level on the floor. Participants held their hands alongside their chest where they would stay throughout the test. In the test process, a supporter held the participants' feet put on the ground. Troops sat up until they touched their knees to both elbows; then, they came back to the floor. The action was frequented as many times as possible under the period for 60 s. The aide totaled and recorded the quantity of right finished sit-ups. The test was taken just once attributable to the impact of exhaustion.

Arm Muscle Power: The troops took a prone position on the floor with the hands straight beneath the shoulders, legs stretched and composed, and toes inserted under so they are in contact with the floor, The troops then push with the arms until they are fully stretched and then lesser their body until their chest dejected towards the floor. All of these actions were performed only by the arms and shoulders. The score was calculated by the number of push-ups while maintaining correct form. The test was also carried out ones to evade fatigue.

However, for the female participants, the test was modified such that they have to cross their leg and their knees touching the floor.

Speed test: As proposed by Russell and Tooley (2011), linear sprint speed was evaluated over 20 m. Starter and ending pointers were positioned for 20 m. Participants started the test from a standing start at a distance of 0.2 m after the first timing gate before starting the test taking after a countdown from the lead researcher. The participant was required to retain running at maximal speed. To avoid a reduction in sprint speed on approach to the 15 m gate, an associate of the coaching staff who stood on a marker 2 m beyond the last timing gate delivered verbal encouragement throughout each effort. The participant was told to keep up the maximal pace until passing the marker on which the mentor stood. The execution times were recorded respectively. Players performed two reiterations with the best (fastest) times utilised for statistical analysis. At least 4 min of restoration were given between repetitions. To ensure the standardised of data, 20 Meter Speed variable was transformed to Velocity. The data for velocity was generated with the formula v = m/s (-1).

Flexibility: As proposed by the Mayorga-Vega et al (2014) throughout a meta-analysis, the flexibility of the lower back and hamstrings was tested by the sit and reach test. The participant performed two trials, and the mean value was generated as the final score for further analysis.

Agility Test: Agility was determined by the T-test agility test. The protocol was conducted as previously described (Hoffman, 2006). Pointers are set up 5 and 15 meters from a line marked on the ground. The participant runs from the 15 m indicator near the line (run in distance to form up speed) and through the 5 m markers, turns on the line and runs back over the 5 m markers. The time is documented using a stopwatch, from when the participants first run through the 5 m indicator and stopped when they return through these markers. Each subject performed two maximal attempts, and the fastest time was recorded for further analysis. The participants should be encouraged not to overstep the line by too much as this will increase their time.

Endurance Ability Test: The multistage 20-m shuttle run test developed by Leger and Gadoury (1989) was applied to acquire the participant's maximal oxygen uptake. Every troop kept running for any length of time he/she could meet to the velocity of the tape. Test scores for every troop were expressed as an anticipated VO2max completed by inspecting the last level and concluded shuttle number at the time when the troop willingly withdraw from the assessment.

DATA ANALYSIS

Multivariate Analysis of Variance Test (MANOVA) was employed to compare the differences of physical fitness levels among the armed uniform package units and to inspect the determinants that distinguish their level of physical fitness (Musa et al., 2016; Abdullah et al., 2016a, 2016b & 2016c). To address the objectives of this study, MANOVA analysis was used to compare the weight, height, waist circumference, neck circumference, velocity, agility T-Test, sit and reach,

push-up, sit-up and VO_{2max} as the dependent variable (DV) with armed uniform package unit as independent variable (IV) (Abdullah et al., 2017a; Abdullah et al., 2016d & 2016e). Meanwhile, Pairwise Comparison (Tukey HSD) follow-up test was conducted to determine the significant parameter that differentiates the groups based on the physical fitness related performance (Abdullah et al., 2017b). All the data analysis was computed by using the Microsoft Excel Add-in; XLSTAT software 2014 USA.

RESULTS

Table 1 presents the descriptive statistic for the male participant in this main study. From the table, it can be seen that the number of participants observed (n = 60), the minimum, the maximum, the mean as well as the standard deviation of the variable are presented above. Table 2 presents the descriptive statistic for the female participant in this main study. From the table, it can be seen that the number of participants observed (n = 60), the minimum, the maximum, the mean as well as the standard deviation of the variable are presented.

Table 1: Descriptive Statistic of the Variables for the Male Participants.

Variable	Observations	Minimum	Maximum	Mean	Std. deviation
Weight (kg)	60	44.100	83.900	61.642	7.398
Height (cm)	60	154.000	176.500	167.622	5.292
Waist Circumference (cm)	60	79.500	106.450	91.756	5.017
Neck Circumference (cm)	60	31.900	41.100	35.511	1.978
Velocity	60	5.277	7.143	6.281	0.498
Agility T Test (s)	60	7.120	11.200	9.319	0.784
Sit & Reach (cm)	60	15.500	53.500	37.113	7.030
Push Up (1 M)	60	17.000	77.000	42.250	12.180
Sit Up (1 M)	60	21.000	55.000	38.900	8.346
VO2max (ml/kg/min)	60	25.900	55.400	42.160	6.513

Table 2: Descriptive Statistic of the Variables for the Female Participants.

Variable	Observations	Minimum	Maximum	Mean	Std. deviation
Weight (kg)	60	37.600	74.000	52.020	7.994
Height (cm)	60	146.500	169.800	156.067	5.069
Waist Circumference (cm)	60	70.500	114.750	93.287	7.970
Neck Circumference (cm)	60	27.450	37.250	32.040	1.951
Velocity	60	3.914	5.682	4.913	0.381
Agility T Test (s)	60	9.730	13.300	11.280	0.858
Sit & Reach (cm)	60	10.750	43.500	32.886	6.636
Push Up (1 M)	60	14.000	48.000	28.900	7.673
Sit Up (1 M)	60	6.000	50.000	25.633	8.971
VO2max (ml/kg/min)	60	22.200	40.200	30.595	4.784

Table 3 and Table 4 projects the multivariate test for the male and female participants with Wilk's Lambda value 0.870 and for female participants with Wilk's Lambda value 1.113. The tables indicated that there is a significant difference in the performance of the fitness variables among the units between both males' and females' participants.

Table 3: Multivariate Test for Male Participants.

UNIFORM UNITS	Lambda	F (Ob. values)	DF 1	DF 2	F (Ob. values)	p-value
(SUKSIS*PALAPES*WATANIAH)	0.870	3.769	20	98	1.679	< 0.0001

Table 4: Multivariate Test for Female Participants.

UNIFORM UNITS	Lambda	F (Ob. values)	DF 1	DF 2	F (Ob. values)	*p*
(SUKSIS*PALAPES*WATANIAH)	1.113	6.143	20	98	1.679	< 0.0001

Table 5 shows the follow-up Tukey's HSD between the categories at a confident level of 95% for the male participants. From the table, it can be observed that weight and waist circumference shows a significant difference with a p-value of p = 0.001 and p = 0.016 respectively dominated by SUKSIS. Height (p > 0.08), neck circumference (p > 0.08) and sit & reach (p > 0.238) are not the significant components that differentiates the physical fitness related performance among all the armed uniform package unit. Meanwhile, five out of ten variables shows a significant difference which are; velocity (p < 0.0001), agility (p = 0.01), push-up (p = 0.026), sit-up (p < 0.0001) and VO_{2max} (p = 0.018) in which PALAPES units have a better performance. Height measurement shows a significant different with a p-value of p < 0001 scored by SUKSIS. However, weight, waist and neck circumferences, flexibility, and upper body muscle are not the significant factors that differentiate the physical fitness related performance among armed uniform package unit with a p-value of p = .673, p > 0.172, p > 0.201, p > 0.407 and p < 0.0001; p = 0.013 respectively. Meanwhile, four out of ten variables shows a significant difference from velocity (p<0.0001), agility (p < 0.0001), push-up (p = 0.001), and VO_{2max} (p < 0.0001) with PALAPES showing a better performance.

Table 6 shows the follow-up Tukey's HSD for the female categories with a confident level of 95%. From the table, it can be seen that the body weight shows no significance difference between the three female armed uniform package unit with a p-value of p = 0.673. Conversely, the height component shows a significant difference in SUKSIS with a p-value of p < 0.0001. SUKSIS are significantly different in body height when the majority of the members achieve the measurement of 160 cm. The waist and neck circumferences show no significance difference among the three contrasts with a p-value of p > 0.172 and p > 0.201 for each component respectively. The velocity component shows a significant difference with a p-value of p < 0.0001

International Journal of Academic Research in Business and Social Sciences
2017, Vol. 7, No. 7
ISSN: 2222-6990

for PALAPES which means the participants have higher performance on the component compared to SUKSIS and WATANIAH. The agility component shows a significant difference in PALAPES with a p-value of $p < 0.0001$. This indicates that PALAPES performed better for this test since they take the shortest time to finish the agility T-test, which means they are agiler than SUKSIS and WATANIAH. There is no significant difference on flexibility component $p > 0.407$. The core muscle strength component shows a significant difference in PALAPES $p = 0.001$. The upper muscle strength component shows a significant difference among the units PALAPES with a better performance $p < 0.0001$. For cardiovascular endurance component, the p-value is $p < 0.0001$ for PALAPES, which indicates that PALAPES differ very significantly from SUKSIS and WATANIAH.

Table 5: Tukey (HSD) Analysis of the Differences between the Categories with a Confidence Interval of 95% for the Male Armed Uniform Package Units.

	Contrast	Diff	Standardized difference	Critical value	Pr > Diff	Sig.
Weight (Kg)	SUKSIS vs WATANIAH	8.06	3.865	2.407	0.001	Yes
	SUKSIS vs PALAPES	6.785	3.254	2.407	0.005	Yes
	PALAPES vs WATANIAH	1.275	0.611	2.407	0.814	No
Height (Cm)	SUKSIS vs WATANIAH	3.56	2.18	2.407	0.083	No
	SUKSIS vs PALAPES	2.45	1.5	2.407	0.298	No
	PALAPES vs WATANIAH	1.11	0.68	2.407	0.776	No
Waist Circumference (Cm)	SUKSIS vs PALAPES	4.318	2.866	2.407	0.016	Yes
	SUKSIS vs WATANIAH	2.79	1.852	2.407	0.162	No
	WATANIAH vs PALAPES	1.528	1.014	2.407	0.571	No
Neck Circumference (Cm)	SUKSIS vs WATANIAH	1.328	2.188	2.407	0.082	No
	SUKSIS vs PALAPES	1.168	1.924	2.407	0.141	No
	PALAPES vs WATANIAH	0.16	0.264	2.407	0.962	No
Velocity	PALAPES vs WATANIAH	0.645	4.938	2.407	< 0.0001	Yes
	PALAPES vs SUKSIS	0.559	4.28	2.407	0.000	Yes

	SUKSIS vs WATANIAH	0.086	0.658	2.407	0.789	No
Agility T Test (S)	WATANIAH vs PALAPES	0.714	3.049	2.407	0.01	Yes
	WATANIAH vs SUKSIS	0.369	1.575	2.407	0.265	No
	SUKSIS vs PALAPES	0.345	1.474	2.407	0.311	No
Sit & Reach (Cm)	PALAPES vs WATANIAH	3.613	1.638	2.407	0.238	No
	PALAPES vs SUKSIS	2.8	1.27	2.407	0.418	No
	SUKSIS vs WATANIAH	0.813	0.368	2.407	0.928	No
Push Up (1 M)	PALAPES vs WATANIAH	9.55	2.676	2.407	0.026	Yes
	PALAPES vs SUKSIS	7.35	2.059	2.407	0.108	No
	SUKSIS vs WATANIAH	2.2	0.616	2.407	0.812	No
Sit Up (1 M)	PALAPES vs SUKSIS	11.4	5.441	2.407	< 0.0001	Yes
	PALAPES vs WATANIAH	10.5	5.011	2.407	< 0.0001	Yes
	WATANIAH vs SUKSIS	0.9	0.43	2.407	0.903	No
VO2max (Ml/Kg/Min)	PALAPES vs SUKSIS	5.435	2.811	2.407	0.018	Yes
	PALAPES vs WATANIAH	5.11	2.643	2.407	0.028	Yes
	WATANIAH vs SUKSIS	0.325	0.168	2.407	0.985	No

Table 6: Tukey (HSD) Analysis of the Differences between the Categories with a Confidence Interval Of 95% for Female Armed Uniform Package Unit.

	Contrast	Diff	Standardized difference	Critical value	Pr > Diff	Sig.
Weight (Kg)	PALAPES vs SUKSIS	-1.868	-0.851	2.406	0.673	No
	PALAPES vs WATANIAH	0				
	WATANIAH vs SUKSIS	-1.868	-0.851	2.406	0.673	No
Height (Cm)	PALAPES vs SUKSIS	-6.313	-5.595	2.406	< 0.0001	Yes
	PALAPES vs WATANIAH	0				
	WATANIAH vs SUKSIS	-6.313	-5.595	2.406	< 0.0001	Yes
Waist Circumference (Cm)	WATANIAH vs PALAPES	-3.896	-1.819	2.406	0.172	No
	WATANIAH vs SUKSIS	-3.896	-1.819	2.406	0.172	No
	PALAPES vs SUKSIS	0				
Neck Circumference (Cm)	WATANIAH vs PALAPES	-0.911	-1.734	2.406	0.201	No
	WATANIAH vs SUKSIS	-0.911	-1.734	2.406	0.201	No
	PALAPES vs SUKSIS	0				
Velocity	SUKSIS vs PALAPES	-0.421	-4.705	2.406	< 0.0001	Yes
	SUKSIS vs WATANIAH	0				
	WATANIAH vs PALAPES	-0.421	-4.705	2.406	< 0.0001	Yes
Agility T Test (S)	PALAPES vs SUKSIS	-1.01	-5.137	2.406	< 0.0001	Yes
	PALAPES vs WATANIAH	-1.01	-5.137	2.406	< 0.0001	Yes
	SUKSIS vs WATANIAH	0				
Sit & Reach (Cm)	SUKSIS vs PALAPES	-2.33	-1.289	2.406	0.407	No
	SUKSIS vs WATANIAH	-2.33	-1.289	2.406	0.407	No
	PALAPES vs	0				

Push Up (1 M)	WATANIAH SUKSIS vs PALAPES	-7.5	-3.997	2.406	0.001	Yes
	SUKSIS vs WATANIAH	0				
	WATANIAH vs PALAPES	-7.5	-3.997	2.406	0.001	Yes
Sit Up (1 M)	SUKSIS vs PALAPES	-16.45	-8.927	2.407	< 0.0001	Yes
	SUKSIS vs WATANIAH	-5.4	-2.93	2.407	0.013	Yes
	WATANIAH vs PALAPES	-11.05	-5.997	2.407	< 0.0001	Yes
VO2max (Ml/Kg/Min)	SUKSIS vs PALAPES	-6.15	-5.88	2.406	< 0.0001	Yes
	SUKSIS vs WATANIAH	0				
	WATANIAH vs PALAPES	-6.15	-5.88	2.406	< 0.0001	Yes

DISCUSSIONS

The findings from the present study revealed that there is a significant difference in the performance of the physical fitness related components between the three armed uniform package units examined in relation to both male and female groups. The findings indicated the male PALAPES units are fitter compared to the SUKSIS and WATANIAH. Meanwhile, the main finding for female participants shows that female PALAPES participants are the fittest uniform unit in physical fitness related performance. However, follow-up tests revealed that there are six out of ten variables, and five out of ten variables contributed to the significance difference among both the male and female armed uniform package units respectively. This physical fitness related performance components which were performed better by both male and female of PALAPES are velocity, agility, core muscle strength, upper body muscle strength, cardiorespiratory endurance and flexibility.

Del Sal et al., (2009) pointed out that armed uniform forces must possess all the basic physical fitness attributes to enable them discharge their duties efficiently and also to be able to endure an excessive physical fitness level to pass their occupation task even during the placement which means, all participants of this study are expected to perform better for all the tests provided. But the finding from this study indicated that only PALAPES performed better compared to SUKSIS and WATANIAH because all the toughest physical fitness related performance tests were dominated by them. This finding is in line with Anderson et al (2001) who inferred that the entire armed security forces in the world need to have the physical

fitness related performance in every case by not only measuring their comparison but all of them should not lack in physical fitness performance.

Many studies revealed that deployed units are generally anticipated to have a greater level of physical fitness such as aerobic capacity, upper body power, agility, flexibility balance and co-ordinations (Sharp et al., 2008; Tomczak et al., 2012). Similarly, other researchers reported that security forces should be able to sustain a great physical fitness level to pass their occupational tasks as well as during their placement (Del Sal, et al., 2009; Rintamäki et al., 2012). This requirement can be applied to the armed uniform package unit in UniSZA because they are also expected always to be prepared for any situation. For example, muscular strength plays a major part when wearing weighty battle kit and during execution of military-like tasks while cardiorespiratory fitness provides the ability to sustain the training load (Knapik et al., 2012).

It was also reported that uniform armed units must always be fit since they are the most needed units when an incident occurs involving emergency matters (Knapik et al., 2012). A comparatively several numbers of studies have measured physical fitness in military and security forces background, and as a result, variety field-based fitness test batteries have been developed to evaluate fitness in this population. Caspersen et al (1985) in their study revealed that the fitness training is delivered five days per week at the Police Training Institute at the University of Illinois. They evaluated the wellness program in order to answer two questions whether the recruits improve their fitness level at the end of the training or not and how did the recruit's fitness compare to the general population. The pre and post fitness scores were compared to general fitness norms by using several parameters which are a muscular strength, body composition, cardiovascular fitness, and flexibility. The test used to evaluate their physical fitness parameter is grip strength, abdominal strength and back strength for muscular strength. For body composition, they take the recruits body weight and percentage of body fat. For cardiovascular fitness, the diastolic and systolic blood pressure with resting and recovery heart take was recorded. The reading of right and left hamstring was recorded for flexibility measurement. The results show that compared to the general population, the Police Training Institute recruits were found to be normally above the average fitness level. Their finding has further highlighted the need for any uniform arm package units to stay fit throughout their careers.

CONCLUSION AND RECOMMENDATIONS

The requirements for any arm uniform package units to remain fit is non-negotiable. The demand for fitness among the forces across the globe will be consistently relevant due to the responsibilities these arm units are saddled with. The possession of basic fitness components will contribute to the development of strong body and mind and hence enable the forces to discharge their duties effectively. The finding from the present study has revealed that two out of the three uniform arm units evaluated do not meet the requirements for the fitness levels expected of them. Based on this finding the following recommendations are therefore drawn; the participants involved in this study should enhance their physical activities in their daily

routine. Since there is a variation in the training schedules between the armed uniform package units, the less fittest i.e. SUKSIS and WATANIAH should replenish their training program in relation to PALAPES. Their trainers should increase their training hours so as to improve their level of physical fitness. Moreover, SUKSIS and WATANIAH should encourage physical training in the early morning, longer duration of marching training, and sports activities in the evening session to enable them to acquire the necessary fitness requirements.

Acknowledgement
We would like to thanks PALAPES, WATANIAH, and SUKSIS members of Universiti Sultan Zainal Abidin (UniSZA) for their participation in this study.

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References

Abdullah, M. R., Alias, N., Maliki, A. B. H. M., Musa, R. M., Kosni, L. A., & Juahir, H. (2017b). Unsupervised Pattern Recognition of Physical Fitness Related Performance Parameters among Terengganu Youth Female Field Hockey Players. *International Journal on Advanced Science, Engineering and Information Technology*, *7*(1), 100-105.

Abdullah, M. R., Eswaramoorthi, V., Musa, R. M., Maliki, A. B. H. M., Kosni, N. A., & Haque, M. (2016c). The Effectiveness of Aerobic Exercises at difference Intensities of Managing Blood Pressure in Essential Hypertensive Information Technology Officers. *Journal of Young Pharmacists*, *8*(4), 483-486.

Abdullah, M. R., Kosni, N. A., Eswaramoorthi, V., Maliki, A. B. H. M., & Musa, R. M. (2016e). Reliability of test of performance strategies-competition scale (TOPS-CS) among youth athletes: a preliminary study in Malaysia. *Man In India*, *96*(12), 5199-5207.

Abdullah, M. R., Maliki, A. B. H. M., Musa, R. M., Kosni, N. A., Juahir, H., & Haque, M. (2016a). Multi-Hierarchical Pattern Recognition of Athlete's Relative Performance as A Criterion for Predicting Potential Athletes. *Journal of Young Pharmacists*, *8*(4), 463-470.

Abdullah, M. R., Maliki, A. B. H. M., Musa, R. M., Kosni, N. A., & Juahir, H. (2016b). Intelligent prediction of soccer technical skill on youth soccer player's relative performance using multivariate analysis and artificial neural network techniques. *International Journal on Advanced Science, Engineering and Information Technology*, *6*(5), 668-674.

Abdullah, M. R., Maliki, A. B. H. M., Musa, R. M., Kosni, N. A., Juahir, H., & Mohamed, S. B. (2017a). Identification and Comparative Analysis of Essential Performance Indicators in Two Levels of Soccer Expertise. *International Journal on Advanced Science, Engineering and Information Technology*, *7*(1), 305-314.

Abdullah, M. R., Musa, R. M., Maliki, A. B. H. M., Kosni, N. A., & Suppiah, P. K. (2016d). Development of tablet application based notational analysis system and the

establishment of its reliability in soccer. *Journal of Physical Education and Sport*, *16*(3), 951-956.

Anderson, G. S., Plecas, D., & Segger, T. (2001). Police officer physical ability testing–Re-validating a selection criterion. *Policing: An International Journal of Police Strategies & Management*, *24*(1), 8-31.

Army Official Portal, (2015 December 28). Retrieved from http://army.mod.gov.my/raw/.

Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public health reports*, *100*(2), 126-131.

Cowell, J. W. (1995). Police Health: a Physician's Guide for the Assessment of Police Officers. *CMAJ: Canadian Medical Association Journal*, *152*(12), 2002.

Del Sal, M., Barbieri, E., Garbati, P., Sisti, D., Rocchi, M. B., & Stocchi, V. (2009). Physiologic responses of firefighter recruits during a supervised live-fire work performance test. *J Strength Cond Res,* 23(8), 2396-2404.

Guest, & Schneider. (2008). Adolescents' extracurricular participation in context: the mediating effects of schools, communities, and identity. *Sociology of Education*, *76*, 89-105.

Hoffman, J. (2006). *Norms for fitness, performance, and health*. Champaign, IL. Human Kinetics.

Knapik, J., Harman, E., Steelman, R., & Graham, B. (2012). A systematic review of the effects of physical training on load carriage performance. J Strength Cond Res, 26(2), 558-597. Jones, B., & Knapik, J. (1999). Physical Training and Exercise-Related Injuries. Surveillance, Research and Injury Prevention in Military Populations. *Sports Medicine*, 27(2), 111-125.

Leger, L., & Gadoury, C. (1989). Validity of the 20 m shuttle run test with 1 min stages to predict VO2max in adults. *Canadian journal of sports sciences*, 14(1), 21-26.

Marfell-Jones, M. J., Stewart, A. D., & de Ridder, J. H. (2012). *International standards for anthropometric assessment*.

Mayorga-Vega, D., Merino-Marban, R., & Viciana, J. (2014). Criterion-related validity of sit-and-reach tests for estimating hamstring and lumbar extensibility: A meta-analysis. *J sports Sci Med*, *13*(1), 1-14.

Ministry of Health Malaysia, (2016 April 29). Lead a Healthy Lifestyle. Retrieved from http://www.myhealth.gov.my/amalkan-cara-hidup-sihat.

Musa, R. M., Abdullah, M. R., Maliki, A. B. H. M., Kosni, N. A., & Haque, M. (2016). The application of principal components analysis to recognize essential physical fitness components among youth development archers of terengganu, Malaysia. *Indian Journal of Science and Technology*, *9*(44), 1-6.

Noguchi, T., Demura, S., & Takahashi, K. (2013). Relationships between Sit-Ups and Abdominal Flexion Strength Tests and the Thickness of Each Abdominal Muscle. *Advances in Physical Education, 3*(02), 84-88.

Pate, R. R. (1983). A new definition of youth fitness. *Physician Sports med*, *11*, 77-83.

Pettigrew, T. F. (1998). Prejudice and discrimination on the college campus. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism*: The problem and the response (pp. 263–279).Thousand Oaks, CA, US: Sage Publications, Inc.

Rintamäki, H., Kyröläinen, H., Santtila, M., Mäntysaari, M., Simonen, R., Torpo, H.,Lindholm, H. (2012). From the subarctic to the tropics: effects of 4-month deployment on soldiers' heat stress, heat strain, and physical performance. *J Strength Cond Res*, *26*, 45-51

Royal Malaysian Air Force Official Portal, (2016 April 28). Retrieved from http://www.airforce.mil.my/mengenaikami/visi-dan-misi?lang=ms-my.

Royal Malaysian Police Official Portal, (2016 April 28). Retrieved from https://www.rmp.gov.my/infor-korporate/polis-diraja-malaysia/dasar-utama-polis-diraja-malaysia.

Russell, M., & Tooley, E. (2011). Anthropometric and performance characteristics of young male soccer players competing in the UK. *Serb J Sports Sci 5*(4), 155-162.

Sharp, M. A., Knapik, J. J., Walker, L. A., Burrell, L., Frykman, P. N., Darakjy, S. S., Marin, R.E. (2008). Physical fitness and body composition after a 9-month deployment to Afghanistan. *Med Sci Sports Exerc, 40*(9), 1687-1692.

Student's Holistic Development Centre, (2016 April 27). Credited Co-curricular Courses. Retrieved from http://www.unisza.edu.my/pphp/index.php?option=com_content&view=article&d=78&Itemid=213.

Tomczak, A., Bertrandt, J., & Kłos, A. (2012). Physical fitness and nutritional status of polish ground force unit recruits. *Biology of Sport, 29*(4), 277-280.

Villalobos, A. S., Dulce, A. J. C., Fontilar, L. J., Gutierrez, D. M. C., Sawali, R. A. C. V., & Almero-Encio, H. (2016). Benefits of Co-Curricular Activities to Academic Performance of Financial and Management Accounting Students. *Asia Pacific Journal of Education, Arts and Sciences,* 3 (1), 122-134.