FITAROH
Fit Your Arch, Change Your Life.

ENT600-TECHNOLOGY ENTREPRENEURSHIP

(NEW PRODUCT DEVELOPMENT)

FACULTY / PROGRAMME: FACULTY OF ALLIED HEALTH / PHYSIOTHERAPY PROGRAMME

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PROJECT TITLE   : ARCH FIT INSOLE

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1. EXECUTIVE SUMMARY

ARCH FIT INSOLE is an auto adjustable insole which will perfectly fit with the user foot that will align the user's body posture and weight distribution. It will automatically sync with the applications installed either in the smartphone with Android or iOs user and smartwatch. Arch fit insole's special sensor will detect user's plantar pressure distribution and as the result, after gaining the perfect plantar pressure distribution to match with ideal body posture, the user will be in pain free while handling and managing daily jobs and routine. This insole truly difference from any other insole in the market right now based on its Hi technology synchronization with the smart phone or any tablet after perfect plantar distribution achieved. Once the buzzing notification pop out from the application installed, the user will be in perfect plantar pressure distribution mode.

Additionally, this insole can be found in various kinds of sizes and design or even it can be custom made with affordable price to be offer. We target in all kind of ages from the kids till the elderly especially for those involve with prolong standing and walking in daily activity. All sorts of people can able to enjoy wearing this smart insole without a doubt.

Fit arch insole marketing strategy will be based solely on location. Fit arch insole will be placed in a business building that receives abundant walk-through traffic. This location will cost a premium and will not be directly linked to the marketing budget as rent has been categorized under general overhead. We will organised a campaign with purpose to increase the target customer's awareness of Fit arch insole.

Roughly, the estimate expenses for Arch Fit Insole about RM 2++ for a unit as the product itself contain with multi-sensory plate that will connect to high technology application to ensure proper weight distribution achieved. We estimate the market size that we can gain from this product in a year will be about RM 100k and will be multiply with 5% profit each year.

2. INTRODUCTION

2.1. Problem Statement/Issues

- Increasing number of complaint of heel, knee and back pain among physiotherapy patients that involving who required prolong standing and walking in normal activity daily living such as cleaner in hospital , teachers and also hawkers.

2.2 Methodology: Data Collections (Who, Where, When, How)

- As a physiotherapist in major, all of us received a number of complaint about heel, knee and back pain recently. The number getting arise commonly in patients who claimed that their daily job requires them to prolong standing and walking as well.

- Regarding those complaint, 3/4 of the number of the complaints received from women compared to men. Moreover, based on observation during taking subjective assessment and objective assessment, proven that most of them wearing high heeled on daily basis and for work and function in order to enhance femininity and attractiveness (Karia et al., 2016).

- In contrast, the negative effects from high heeled such as bad body posture, shortening of Achiles tendon, calf muscle tightening , instability while walking and also ankle sprain can easily affected their daily (Karia et al., 2016).

- Evidence based practice on previous study showed a positive correlation between work-related prolonged weight bearing and foot pain.(Goweda et al., 2015)

- According to Amin et al., (2016), a study has been done to measure the prevalence of work related musculoskeletal disorder among nurses with subjects number is 376. The prevalence of work related musculoskeletal disease among nurses shown in table below.

Table 3: Prevalence of WRMSD by anatomical site among nurses (N=376)

Body regions	Prevalence, % (n)			
	Lifetime	12-months	1 month	7-days
Neck	65.2 (245)	48.9 (184)	59.2 (109)	21.3 (23)
Shoulders	64.9 (244)	36.9 (139)	59.0 (82)	13.1 (11)
Upper back	62.5 (235)	40.7 (153)	55.6 (85)	14.4 (12)
Arms/elbows	13.8 (52)	6.6 (25)	28.0 (7)	1.3 (1)
Wrists	58.0 (218)	26.3 (99)	47.5 (47)	6.9 (3)
Lower back	44.9 (169)	35.3 (133)	63.2 (84)	14.6 (12)
Thighs	34.6 (130)	19.4 (73)	53.4 (39)	5.6 (2)
Knees	47.9 (180)	25.6 (96)	61.5 (59)	8.5 (5)
Ankles/Feet	73.7 (277)	47.2 (178)	68.0 (121)	20.5 (25)

(Amin et al., 2016)

- A group discussion has been make regarding to discuss the arising issue. During discussion, several factors have been identified as a contributing factors related to heel, knee and back pain.

- One of the factors related is improper weight distribution and improper shoes wear during standing and walking in daily activities.

- Usage of insoles could significantly reduce local peak pressure.(Tsung et al., 2004)

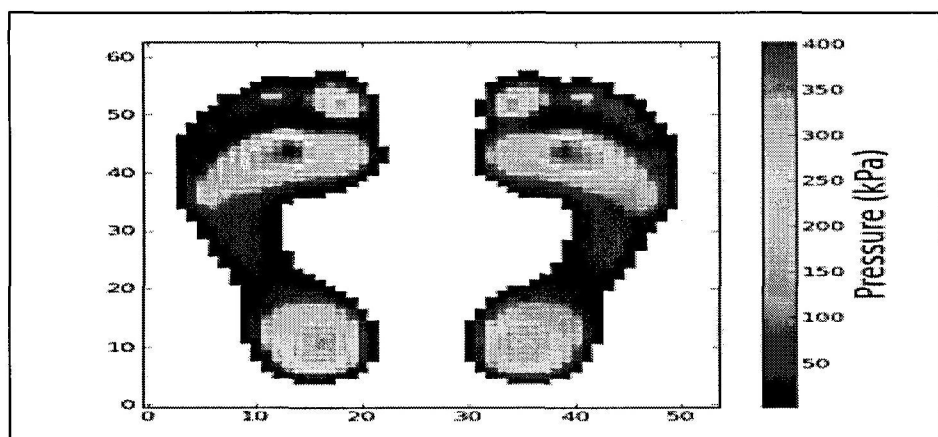- Figure 1 below shows plantar pressure measurement distribution. The red colour distribution shows highest peak pressure plantar distribution compared to blue and yellow distribution.

Figure 1: Pressure plantar distribution