Climbing as a worksite intervention: An strategy for climbing walls acceptance in business in México.

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Abstract

There is a problem, which attribute almost 3.2 million deaths per year worldwide; sedentarism. Which just in Mexico, affects the 56 percent of the population; especially those who live in a rigorous, monotonous and prolonged routine; employees, whom due to the lack of performance of the minimum physical activities needed per day, live in an unhealthy environment, where stress, anxiety, depression and obesity are constantly detected. Having the knowledge of the benefits that climbing execution can provide to the people, for this research, a climbing wall, was proposed to several business (n=8) of different areas as a worksite intervention. Despite sport climbing have been growing around the world in the recent years, in Mexico, it is still considered as a new trend which comes accompanied with a feeling of fear or rejection from the human resources directors. A user-centred design methodology was used for the design of an strategy to introduce climbing and its benefits in business in Mexico, after several approaches with the directors, gamification was selected as the key element for the acceptance of the worksite intervention.

Keywords
Gamification, Sedentarism, Design, Health, Physical Activity

Résumé

Il y a un problème qui attribue près de 3.2 millions décès par an dans le monde entier : le sédentarisme. Qui juste au Mexique, affecte les 56 pour cent de la population ; en particulier ceux qui vivent dans une routine rigoureuse, monotone et prolongée ; les employés, qui en raison du manque de performance du minimum d'activités physiques nécessaires par jour, vivent dans un environnement malsain, où le stress, l'anxiété, la dépression et l'obésité sont constamment détectés. Ayant la connaissance des avantages que l'éjection d'escalade peut avoir chez les gens, pour cette étude, un mur d'escalade, a été proposé à plusieurs entreprises (n=8) de différents secteurs comme intervention sur le lieu de travail. Bien que l'escalade sportive se soit développée dans le monde entier ces dernières années, au Mexique, elle est toujours considérée comme une nouvelle tendance qui s'accompagne d'un sentiment de peur ou de rejet de la part des directeurs des ressources humaines. Une méthodologie de conception centrée sur l'utilisateur a été utilisée pour la conception d'une stratégie visant à introduire l'escalade et ses avantages dans les affaires au Mexique, après plusieurs approches avec les directeurs, la ludification a été choisie comme élément clé pour l'acceptation de l'intervention sur le lieu de travail.

Mots clés:
Ludification, sédentarisme, dessin, santé, activité physique

Introduction

Sedentarism is understood as the lack of physical activity development, and its importance lies in the OMS data which indicates that it occupy the forth place as a death promoter worldwide, with almost 3.2 million deaths per year, people with sedentarism have a risk between 20 and 30% higher than others to die because of any cause, to develop regular physical activity also reduces the risk to suffer depression, cardiovascular illness, hypertension, diabetes and breast and colon cancer. (Medina C., 2012) which figures between the principal causes of mobility in Mexico. (Instituto Mexicano para la Competitividad, 2015)

In the specific case of Mexico, the second country with obesity in the world, with almost 52% of the population with overweight, attributes more than 68 thousand deaths annually. One of the principal reasons consist in the excessive energy intake mixed with a low consumption of it. (Rivera-Domarco,2013), a clear example is that in 2012, the physical activity developed was lower that the minimum recommended by the OMS, where 41% of the teenagers and 29.3% of the adults were sedentary or moderately active. Just in Mexico, affects the 56 percent of the population; especially those who live in a rigorous, monotonous and prolonged routine; employees, whom due to the lack of performance of the minimum physical activities needed per day, live in an unhealthy environment, where stress, anxiety, depression and obesity are constantly detected.

As a solution of the problem the International Association for the Promotion of Occupational Health have corroborated that the strategies for worksite interventions for the promotion of physical activity in the world had probed to have a preventive focus for obesity, diabetes, cardiovascular illness, cancer and depression (Sparling PB.2010); however, there is still work to do in the improvement of strategies to change bad habits in the employees as, sedentarism, smoking and an unhealthy diet. (Cahill. K. 2014) (Emmons KM, *et al.* 1999) (García-Guerrero J. 2013)

There are four different kinds of worksite interventions for the promotion of physical activity: Contests and competitions, information & assessment, organizational culture and norms and Access and physical environment . (Active Living Research, 2015) A climbing wall as a worksite intervention could be considered as kind a) contest and competitions, stablishing different challenges for the employees and kind B) access and physical environment, as it functions as a physical activity facility.

It is considered that for the effectiveness of the exercise as a therapy, in this specific case, for the promotion of subjective well-being and reduction of work stress, exercises where the user can achieve realistic and tangible goals must be promoted. (Knapen J, *et al*., 2014), also activities that require of coordination, concentration and supervision (Voelcker-Rehage C, Godde B, Staudinger UM, 2011) (Kodis J*, et al,* 2001). At the same time the literature review suggest that people could be more open and capable to adapt to moderate activities, once those have been stablished there is a trend that people stay for a longer period that with a vigorous activity (Engelke & Lawrence D, 2001)

Sport climbing have probed to have an effective treatment for stress reduction as it gathers the aspects described above, being an activity that requires great concentration and coordination, it also can be adapted to the level of physical capabilities of each person, can be worked by groups that promote the socialization, and activates intense emotions like fear, pride or courage. (Luttenberger K, *et al* 2015) At the same time, climbers can develop problem resolution abilities, self-efficiency, self-esteem, self-perception and be competitive. (Bourdin, C, *et al*, 1998) (Mazzoni E, *et al,* 2009)

Schnitzler mentions that by practicing climbing as a therapy it can offer solutions to sickness both physical as psychosomatic, in the next figure several depressive traits and examples of aspects that the promotion of climbing in patients with depression are shown. (Schnitzler EE. 2009)

Trait	**Examples of aspects improved by climbing**
Weak personality structure	Confidence improvement
	It is experienced that success is not a random fact.
Dependent relationships patterns detected	Improvement autonomy
Fatigue	Trains to dose work
Languor	Motivation for daily life activities
	Promote the risk assumption and to face new tasks
	New experiences through the promotion of self-motivation
	New cognitive process , where the climber prefer a positive activity rather than a negative one.
Conflict behaviour in relationships	Competence detection
Duel	Letting go in order to move on

Table 1: Climbing as a therapy for mental. Source: (Schnitzler EE. 2009)

Taking into consideration the potential that sport climbing as an alternative therapy. Climbing walls have been installed in the Medic Centre of Charlie Norwood for Veterans in the USA (Charile Norwood VA Medical

Center, 2011) and in several psychiatry hospitals in Germany. (Mehl K, Wolf M., 2008 , Mollenhauer A, Doll N, Renz P, Luntz J., 2011 & Wallner S., 2010). Regrettably, the existing therapeutic climbing walls are focus in a very specific market, restricting the access to other population that could be benefited by the properties of the sport. Despite sport climbing is a popular and established sport in a lot of countries, in Mexico it is still considered as an emergent trend, product of the dispersion and. A lot of times, because of the lack of knowledge and communication, climbing in Mexico could be growing with a lower velocity than to its real potential. (Climbing in Mexico)

For this research climbing activities were proposed to several businesses (n=8) in the city of Queretaro, Mexico, but a rejection of the sport was detected instantly by the human recourses director and the bosses, excusing themselves because of the high risk of the sport although the low risk was demonstrated to them before having made the proposal of the implementation.

To increase the accessibility and promotion of the sport in Mexico, the necessity of designing an strategy for the implementation of climbing as a worksite intervention is detected, for being able to implement it in different work communities in the city with the purpose of reducing the sedentarism in employees, promote their wellbeing and reduce their work stress and to also demonstrate the benefits of climbing in people outsiders to it.

Methodology

The Human Centred Design methodology created by IDEO was used. This method boards the design process focused in the user and requires of a smaller sample than the one used in an statistical method, , nevertheless, the research stage entails more depth. (IDEO,2015)

The main steps of this design methodology are: Hear, Create and Deliver

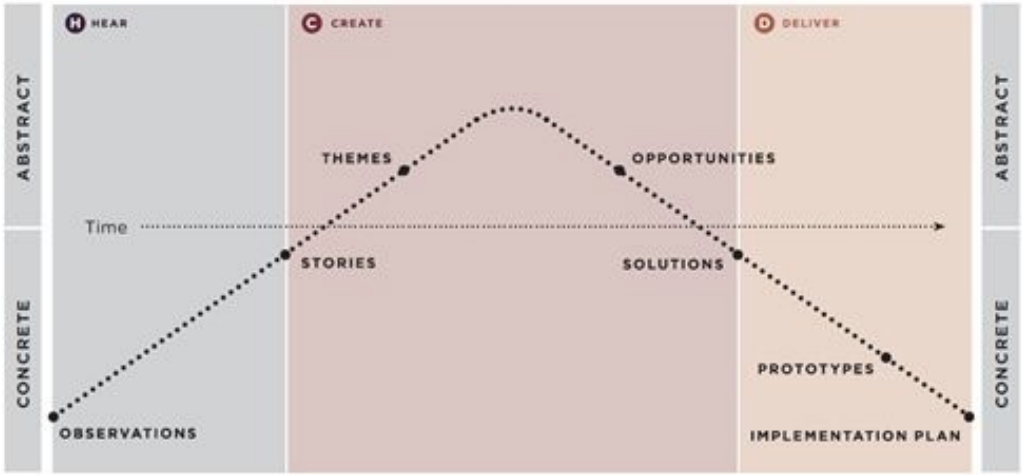

Figure 1: Human Centred Design. Source: (IDEO, 2015)

In this stage a definition of the problem was delivered through the observation and interaction with the user and costumer, as well as a review and analysis of the literature.	An analysis of the recollected information was generated, sub variables were defined in relation with the application of questionnaires to the user and a solution to prototype was proposed.	The final proposal to be implemented was prototyped.

Table 2: Tasks done by stage, Source: Own elaboration

Tools employed and goals for "Hear" stage:

1- The International Questionnaire for Physical Activities, long version, was applied to 23 administrative employees with the objective to define in which context of their daily life they were less active.
2- A journey map was made with the administrative employees with the objective to detect the moments where they perceive as the more energetic and with more physical activity demand.
3- A focus group was designed with the general objective to know the employee perspective about the physical activity, and the following specific objectives:
   a) To know if its space promotes the physical activity
   b) Know their motivations, personal limits and aspirations related to physical activity.
   c) Qualitatively measure of the level of physical activity
4- Deep interviews where made to different bosses or human resources directors to know about existing worksite interventions, their characteristics and limitations.

Results & Discussion

Hear stage:

1- Work context was detected as the less active, with an average of 15 minute or less achieved per day, in comparison with an average between 31 to 45 minutes of activity developed in the home, transport and recreational time.

1	2	3	4
15 minutes or less	16 to 30 minutes	31 to 45 minutes	46 to 60 minutes

Table 3: Scales for the measure of time dedicated to physical activity per context. Source: Own Elaboration.

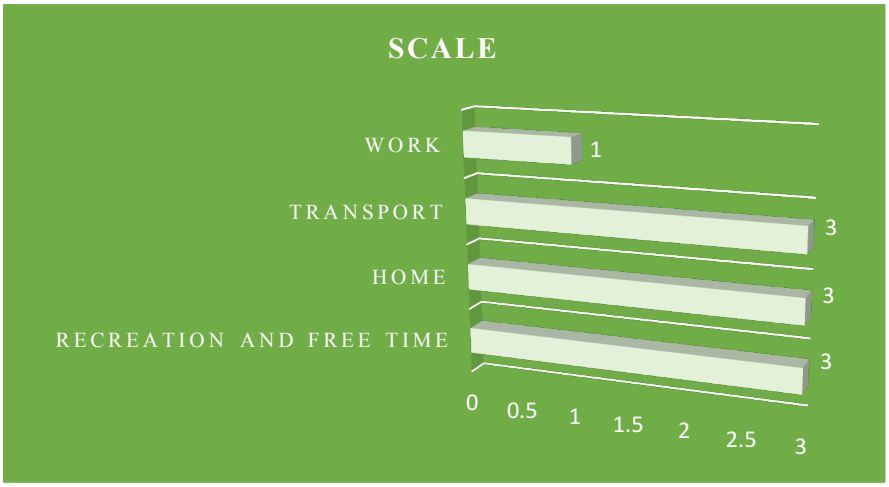

Figure 2: Time dedicated for physical activities per context. Source: Own Elaboration

2- After the Journey map application the following data was detected:

-More energetic moments detected in the mornings

-More pleasant moments around eating hours

-Lack of physical activities between having ate until leaving work.

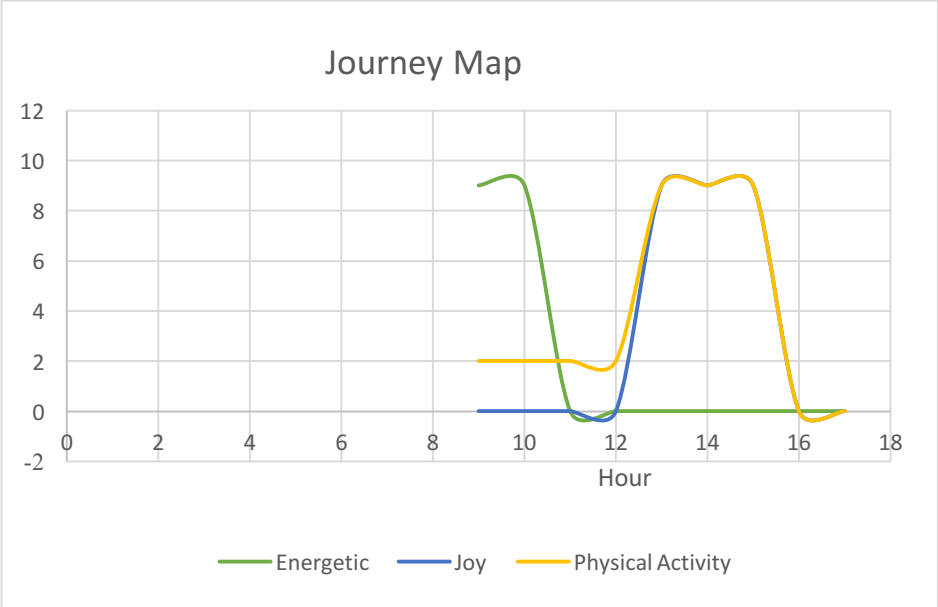

Figure 3: Results of the Journey Map. Source: Own Elaboration

3- With the Focus Group application to the employees, it was found that for the majority of the employees being sited represents the 80% of their time at work according to their responses of the Occupational Sitting and

Physical Activity Questionnaire. Also it was found that the employees can hardly imagine a physical active life because of the lack of time administration.

4-. The main insights of the interviews with the directors where:

-The implementation of a worksite intervention requires of an extra job for the coordination personal, due to the necessity to motivate the employees to participate in the programs by promoting the benefits of the activity as well as giving rewards.
- The interventions last just one season.

Create stage:

Gathered and analysed this information, the conceptualization of the implementation strategy was conceptualized being *gamification* the main concept to be used when implementing a climbing wall as a worksite intervention.

The *gamification*, parts of the notion that video games are designed with the main objective of entertainment, and how it is demonstrable the motivation they develop on users to engage with them regardless of their intensity and duration; it is suggested that the elements of the game should be used to generate this effect in products and services not specifically designed to play with them. For the best understanding of the concept it is said that the word *gamification* uses as origin, ludus; which includes a game structured with rules and a competence to achieve a specific objective.
(Nacke L. *Et al.* ,2011)

When climbing wall was proposed to the director of the case study business as a game where his employers could have a recreational activity, instead of a sport implementation, it was accepted; its thought that, because of the visceral relationship that exist between humans and game, the supposed risk that they though the activity could have, is immediately vanished.

Deliver stage:

The prototype to be implemented is constructed

Figure 4: Construction step by step of the climbing wall prototype. Source: Own Elaboration

Figure 5: Preview of the design game mapped over the climbing wall. Source: Own Elaboration

Future work

Before and after the implementation of the worksite intervention, it is suggested to measure the level of sedentarism, subjective well being and work stress to prove the alteration that the climbing wall could promote.

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