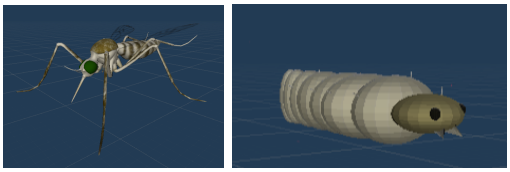
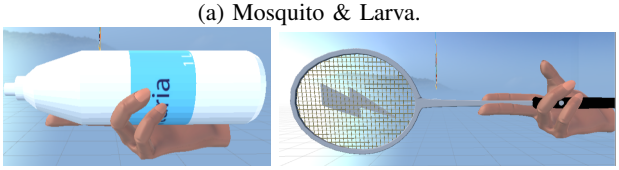
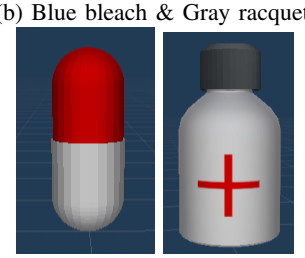


(a) Mosquito & Larva.



(b) Blue bleach & Gray racquet.



(c) Pill & Pill bottle.

Fig. 7: Enemies, weapons and items of the game.

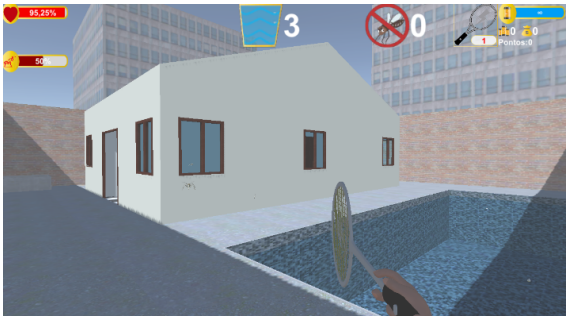


Fig. 8: Blurred vision and pain sound for dengue effects.

a time interval, and depends of the limited number of active mosquitoes attacking the player at the same time.

The player starts the game with only a gray colored racket (Fig. 7b) with infused ammunition to kill mosquitoes. Using this racket, the player is able to earn money to buy bleach (Fig. 7b) to kill the larvae and thus destroy a spawn point, as well as other desired items, such as: electric rackets with variations of blue, red and gold (each represents a different damage); temporary protection (repellents in blue, red and gold); and batteries for recharging the rackets (except the gray that has an infinite charge). In addition to the items that can be purchased, the player can obtain the pill and the bottle of pills (Fig. 7c) to heal obtained wounds (Fig. 8), which are randomly acquired by killing mosquitoes.

V. Conclusions and Future Work

This paper presented Aedes na Mira 2.0, a mobile VR game to support the fight against the Aedes aegypti mosquito. For this, development strategies and developed resources to provide an interactive mobile environment in screen, VR and control modes for the game were described. Moreover, obtained mechanics and dynamics for the proposed game were also presented, showing the game applicability to improve the player knowledge to combat the mosquito.

In fact, considering the several educational concepts available in the game, it is possible to affirm that the game can promote the entertainment and, at the same time, contribute to understand related elements to the fight against the Aedes aegypti mosquito. Moreover, the game shows different elements without the need to create a whole set of information for the player to be presented in a boring and tiring way, such as traditional newspaper and magazine ads for example.

Regarding the VR environment, the integration with bluetooth controls was carried out successfully, providing an adequate interaction system for the proposed scenes, elements and dynamics that characterize the game. However, for the screen adaptation with buttons, it is necessary to improve the player movements around the game scene, in order to facilitate the execution of basic player actions, such as turn left and right in a fluid way.

Many dynamics and features are also being presented to the player in the early stages of the game, making it difficult and unpleasant at first. Therefore, it is necessary to provide a tutorial phase, making it possible for the player to experience first the interaction with the game environment, as well as to understand the basics of the game's logic before starting a game.

As future work, new educational elements will be added for the game, such as the use of insecticides to combat mosquitoes and the collection of garbage that accumulates water and generates new spawn points. An evaluation of the effectiveness and acceptance of the game with the target audience (children and teenagers), together with the availability of the game for download, will also be performed in the future.

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