A Phenomenological Inquiry into the Meaning Ascribed to Physical Activity by Brazilian Men with Visual Impairments

Justin A. Haegele, Samuel R. Hodge, Paulo Gutierres Filho, Nillianne Ribeiro, and Christian Martínez-Rivera

Structured abstract: *Introduction:* Research examining how adults with visual impairments experience physical activities is currently limited to specific age ranges (for example, youths or older adults) and geographic locations (such as Europe and North America). In an effort to extend the current literature base, the study presented here focuses on a cohort of young or middle-aged adults with visual impairments who live in Brazil. Thus, the purpose of this exploratory study was to examine the meaning Brazilian adults with visual impairments ascribed to their physical activity experiences. *Methods:* This study was situated in the qualitative paradigm utilizing a phenomenological design. Three male participants (aged 22 to 47 years) were purposively recruited to participate. The main source of data for this study was a focus group interview using an open-ended, guided approach that was recorded on audiotape. A three-step, line-by-line, thematic analysis, informed by the phenomenological research approach, was utilized to extract meaning from the participants' experiences. Several strategies were employed to reduce subjective bias, establish trustworthiness, and enhance transferability. *Results:* Two interrelated themes emerged when participants described how they experienced physical activities and the meaning they ascribed to those experiences. The first theme, physical activity–indispensable, describes the importance the participants ascribed to physical activity engagement and the benefits that they garnered from these experiences. The second theme, perceived physical activity impediments, exposed the obstacles participants experienced when trying to engage in physical activities. *Discussion:* This study's findings expose the meaning that a cohort of Brazilians with visual impairments ascribe to physical activity engagement. The participants explained how engagement in physical activity helped alleviate some social issues they previously experienced, but also noted barriers to engaging in these activities. *Implications for practitioners:* Programs targeting physical activity promotion for adults with visual impairments should show the reported benefits of engaging in physical activity programs while attempting to manage potential obstacles that would discourage a physically active lifestyle.

Benefits associated with regular engagement in physical activity have been well documented and are universal for all individuals. Unfortunately, adults and youths with visual impairments (that is, those with low vision as well as complete blindness) tend to spend less time engaging in physical activities and more time in sedentary activities (such as playing computer games) than do their sighted peers (Haegele & Porretta, 2015; Holbrook, Caputo, Perry, Fuller, & Morgan, 2009; Marmeleira, Laranjo, Marques, & Pereira, 2014). Among barriers to engaging in physical activity, Jaarsma, Dekker, Koopmans, Dijkstra, and Geertzen (2014) discovered, utilizing a survey methodology, that visual impairment in and of itself may be the most important personal barrier to being physically active. Because adults with visual impairments tend to be inactive, they have a tendency to miss out on the health-related benefits of physically active lifestyles. For example, they tend to experience a high prevalence of health-related conditions typically associated with inactive lifestyles, such as obesity (Holbrook et al., 2009). Obesity and physical inactivity have been linked to additional issues that can affect the lives of individuals with visual impairments, such as chronic lifestyle-mediated diseases, limitations in performing activities of daily living, and low self-reported health-related quality of life (Booth, Roberts, & Laye, 2012; Crews & Campbell, 2001; Haegele, Famelia, & Lee, 2017; Holbrook et al., 2009).

Although it is known that adults with visual impairments tend to not regularly engage in physical activities, research on how they experience those activities is undeveloped. In recent years, researchers have begun to explore the perspectives of those with disabilities in physical activity settings (Haegele & Sutherland, 2015) to gain insights into the meaning they ascribe to their lived experiences. By listening to how individuals with disabilities, including those with visual impairments, think and feel about their experiences, insight can be gained to help identify strategies to enhance physical activity opportunities (Byrnes & Rickards, 2011; Haegele & Sutherland, 2015). To understand how adults with visual impairments experience physical activity, it is essential to explore these experiences from their viewpoint. To provide participants with a medium to express the meaning they ascribe to physical activity experiences and the salient features that contribute to their various feelings (Spencer-Cavaliere & Watkinson, 2010), the qualitative research paradigm has been favored.

Currently, qualitative research focusing on individuals with visual impairments in this arena is limited to specific age ranges. For example, researchers have explored the perspectives of children with visual impairments toward physical activity (including physical education) experiences (de Schipper, Lieberman, & Moody, 2017; Haegele, Sato, Zhu, & Avery, 2017; Haegele, Yessick, & Kirk, 2017; Haegele, Zhu, & Davis, 2017; Lieberman, Robinson, & Rollheiser, 2006). This line of research has exposed the fact that adaptations and feelings of acceptance are essential to success in physical activity settings; however, instances of bullying, social isolation, and other negative social interactions are ubiquitous and may decrease the interest that those with visual impairments have toward being active (de Schipper et al., 2017; Haegele, Famelia,

& Lee, 2017; Haegele, Sato, Zhu, & Avery, 2017). Recently, Phoenix, Griffin, and Smith (2015) examined physical activity facilitators and barriers among older adults with vision loss using qualitative methodologies. Their analysis revealed several themes—such as confidence or fear when engaging in activities and transportation issues—that were central to older adults' experiences with physical activity. However, it is reasonable to suggest that young to middle-aged adults experience physical activity differently than do youths or older adults. Thus, research exploring the experiences of youths and older adults may not be transferable to young and middle-aged adults with visual impairments.

The extant literature in this arena is also limited by geographic location. Currently, all research focusing on the physical activity experiences of individuals with visual impairments has been conducted in the northern hemisphere (such as in Europe and North America). However, research indicates that where people live and the culture they experience influence their health and physical activity behaviors (Myers, Denstel, & Broyles, 2016; Yang & Matthews, 2010). Thus, physical activity participation may be experienced differently among adults with visual impairments living in various geographic regions. Cultural or geographic influences may promote or discourage different forms of physical activity, limiting the generalizability or transferability of research conducted in North America or Europe. In developing countries such as Brazil, although sport and physical activity may be highly valued, there may be fewer opportunities for individuals with visual impairments to participate in physical activity programs because of a lack of social inclusion (Gregoul, Gobbi, & Carraro, 2014). As such, in an effort to extend the extant literature, this study focuses on a cohort of young or middle-aged adults with visual impairments who live in Brasília, Brazil. Specifically, the purpose of this exploratory study was to examine the meaning that Brazilian adults with visual impairments ascribed to their physical activity experiences.

Methods

Research approach

In order to explore the meaning that Brazilian adults with visual impairments ascribe to their physical activity experiences, this study was situated in the qualitative paradigm, utilizing a phenomenological design. Phenomenological inquiries examine the meaning people make of their lived experiences (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005) and how they make sense of the world from their own perspective. More specifically, this approach allows researchers to focus on the complex understanding of experiences as lived processes that are unique to each individual's situated relationship with the world (Smith, Flowers, & Larkin, 2013). This qualitative approach allows participants to reflect on embodied experiences and develop personal and individualized meaning related to those experiences (Smith et al., 2013). The central notion of phenomenology is intentionality, which suggests that whenever there is experience or consciousness it must be "about" something. As explained by Bredahl (2013), *intentionality* "refers not only to what we see or experience but the

relational way we see and experience: the attitudes, values, and aims we bring, and the emotional state we are in are always contained within the experience" (p. 42). In the current study, accordingly, we focused on physical activity experiences as well as attitudes, values, and feelings (the meaning) that participants ascribed to those experiences.

Participants

Participants were purposely recruited to participate in this study based on the following pre-established eligibility criteria: being at least 18 years of age but less than 50; self-identification as having a visual impairment; and a willingness to participate in a focus group interview for approximately 120 minutes. This age range was selected in order to include individuals during early and middle adulthood. Participants were recruited during a DV Na Trilha [Visually Impaired People on the Trail] adapted cycling event in Brazil's capital city of Brasília. DV Na Trilha is a community-based social inclusion biking event held each Saturday morning at the Brasília botanical garden. The third and fourth authors attended the event, and presented information about the study to potential participants. Interested potential participants were asked to approach the third and fourth authors for more information about the focus group interview. Of those who expressed interest in participating in this study, three attended and completed the focus group interview. The selected participant pool was purposely small, in order to provide sufficient data to develop meaningful points of similarity among participants, and so that the researchers would not be overwhelmed by the amount of data generated (Smith et al., 2013). All participants were Brazilian adult males with visual impairments who were full-time residents of Brasília. Table 1 provides descriptive and demographic information about each participant. Pseudonyms have been used (Bernardo, Guilherme, and Vitor) to protect the participants' identities.

Data collection

The main source of data for this study was a focus group interview using an open-ended guided approach (Patton, 2002) that was recorded on audiotape. The focus group interview followed a guide that was inspired by the research focus and phenomenological research tradition. The interview guide was used as a checklist to ensure that specific topics were touched upon, allowing the order and magnitude of topics to remain conversational. The guide was developed by the first author, and it was then reviewed by a panel of experts with experience in conducting qualitative research in the field of adapted physical activity to ensure cultural relevancy and validity. Revisions to the initial interview guide were made based on recommendations of the panel, and all revisions were subsequently reviewed and approved by the panel. Questions were purposely open and expansive, to encourage participants to talk at length about topics (Smith et al., 2013), and were focused on the participants' physical activity experiences. After development was complete, the demographic questionnaire and interview guide were translated from the original English language editions to Portuguese using the cross-cultural translation technique described by Banville, Desrosiers, and Genet-Volet (2000).

The focus group interview was facilitated by the first author, with the assis-

Table 1
Descriptive and demographic participant information.

Pseudonym	Age	Race or ethnicity[a]	Acuity (ISBA classification)	Visual impairment notes
Bernardo	45	Branco	Complete blindness (B1)	Acquired visual impairment as a result of diabetes. Vision began to decrease at age 29. Lost all functional vision by age 35.
Guilherme	47	Branco	Complete blindness (B1)	Hereditary, congenital, and progressive vision loss. Vision began to decrease during childhood. Lost all functional vision by age 40.
Vitor	22	Branco	Travel vision (B2)	Acquired visual impairment as a result of an accident. Lost most functional vision during high school.

[a]Participants self-identified their race or ethnicity in an open-ended question (Branco means White). ISBA Classification B1 (Bernardo and Guilherme) includes individuals with no light perception in either eye up to light perception, but the inability to recognize the shape of a hand at any distance or in any direction. Classification B2 (Vitor) refers to individuals with the ability to recognize the shape of a hand up to a visual acuity of 20/600 or a visual field of less than 5 degrees in the best eye with the best practical eye corrections.

tance of a team of three translators who were fluent in English and Portuguese. Before initiating data collection, each participant was read an informed consent document, and was asked to verbally agree or disagree to participate in the study. They were each assured that participation in this study was voluntary, and informed consent was received from each participant. The interview began with an explanation of the study's purpose and the researchers' position as advocates for physically active lifestyles (Chiseri-Strater, 1996). The focus group interview session lasted approximately 120 minutes and retained a conversational tone throughout. At the end of the session, each participant was asked to share any additional information that may have influenced his experiences in physical activity. The interview discourse was audio-recorded with the participants' permission and was transcribed verbatim, and then transcripts were translated from Portuguese to English. The institutional review board at the first author's university reviewed the study protocols and deemed them acceptable.

Data analysis and trustworthiness

The data analysis selected for this study was directly aligned with and informed by the phenomenological research approach. Thus, a three-step, line-by-line thematic analysis was utilized to extract meaning and structure from the participants' experiences. The lead, second, and fourth authors began by reading and re-reading the focus group interview transcripts. This method allowed the analysts to become intimate with the data and discover statements that were especially relevant and meaningful, while also allowing a model of the overall interview

to emerge (Smith et al., 2013). While reading and rereading the documents, the analysts highlighted phrases with brackets and coded them into meaningful labels. Next, the authors independently grouped the codes into thematic clusters of meaning across participants and compiled these descriptions into themes and subthemes. Reoccurring themes and subthemes were identified as those that were present for all participants. For the final step, the analysts met to discuss themes and subthemes. At this point, emerging themes that were unrelated to the research focus were discarded. Reoccurring themes were discussed until complete (100%) agreement was reached for them. The agreed-upon themes were then summarized and presented as results.

Several strategies were employed during data collection and analysis to reduce subjective bias, establish trustworthiness, and enhance transferability. During data collection, sensitivity to context was addressed when the lead author explicitly acknowledged the researchers' position as advocates for physical activity to participants to reveal this bias, as well as through the inclusion of abundant numbers of verbatim transcript extracts presented in the results (Smith et al., 2013). Further, the thoroughness (rigor) of the study was established by utilizing a reviewed and evaluated interview guide and selecting a reasonably homogenous participant group. During data analysis, the researchers worked independently at first and later met to analyze and interpret the data (investigator triangulation) to ensure dependability of the findings. Also, an analyst familiar with cultural particularities of Brazil was included in the data analysis procedures to ensure that these were not lost in translation. Peer debriefing, the process of exposing oneself to knowledgeable peers, was utilized to explore aspects of inquiry that might have remained only implicit in the inquirers' minds (Patton, 2002). In addition to input from the authorship team, the first author shared data with and received critical feedback from a researcher unrelated to this project, who deemed the interpretations of the data to be representative of the participants' statements.

Transferability refers to whether qualitative findings can be transferred to other similar contexts or situations while preserving the meanings and interpretations of a particular study (Leininger, 1994). Transferability was enhanced in this study by the researchers providing abundant detail about the participants and their specific contexts (An & Goodwin, 2007), which allows for natural comparisons to other Brazilian males with visual impairments.

Findings and discussion

Each of the participants in this study reported engaging in various physical activities prior to and after losing their functional vision. Resistance or weight training, five-a-side soccer, walking, and cycling were some of the most favored activities. They admitted that their visual impairments radically influenced their physical activity participation, and they each described time as the most influential barrier that currently prevented them from engaging in more activities. When recalling how they experienced physical activities and the meaning they ascribed to those experiences, two interrelated themes emerged: physical activity–indis-

pensable and perceived physical activity impediments. The first theme, physical activity–indispensable, shows the importance the participants ascribed to their physical activity engagement, as well as the physical and socialization benefits that they garnered from those experiences. The second theme, perceived physical activity impediments, exposed the economic, environmental, and societal obstacles that participants experienced in trying to engage in physical activity, and revealed how those obstacles impacted their feelings about physical activities.

Physical activity–indispensable

Benefits associated with regular engagement in physical activity relating to health-related conditions and quality of life have been well represented in the literature (Booth et al., 2012; Crews & Campbell, 2001; Haegele, Famelia, & Lee, 2017; Holbrook et al., 2009). Thus, it is not surprising that Phoenix and colleagues (2015) indicated that older adults with visual impairments who maintain physically active lifestyles have described exercise as pleasurable and essential to managing mental health issues and chronic health conditions. As in previous research, the participants in this study described a number of health-related benefits that they experienced as a result of physical activity. Specifically, Guilherme said that engagement in physical activity "gives [your body] more firmness, improves posture and body awareness." Likewise, Bernardo referred to the firmness that weight training allowed him to achieve throughout the interview process. In addition to physiological changes in their bodies, participants said that engaging in regular physical activity improved their perceptions of the quality of their daily lives. For example, Guilherme said, "You can see how much you can walk on your own; you do not need to be holding [a person's] arm all the time. That it is possible for one to walk autonomously." Here, Guilherme clearly describes the effect he believes physical activity and exercise have had on his daily activities, and the meaningfulness of that effect. He continued by describing exercise as "addicting," and said that after he began to realize these benefits he was anxious to continue to search for physical activity opportunities. He explained, "I searched for a gym after I joined the DV Na Trilha, for example, because I felt more need to exercise. One thing is sure to lead to another." His continued pursuit of physical activity and exercise were surely related to the benefits he experienced during his reintroduction to exercise through DV Na Trilha.

Unlike Guilherme and Bernardo, Vitor did not comment on the health-related benefits of physical activity and exercise. Rather, the more meaningful benefits he experienced pertained to socialization with peers with and without visual impairments. Specifically, he explained how engaging in physical activity and socialization during exercise has extended beyond only socializing during predetermined events and has led to meaningful friendships by saying that "pedaling [cycling] has even helped in socialization" and "I think that cycling is more of a pretext to meet people, and introduce yourself to them. If you do so, there are meetings besides [DV Na Trilha] that you can get invited to for additional cycling or socialization."

Guilherme agreed with Vitor's assertion, and said that "the interactions that

we have with others who are visually impaired, and the friendships we are creating, I think are the most important." Guilherme continued:

> . . . this experience [physical activity] is important, in addition to the physical benefits. I started learning about the project [DV Na Trilha] through friends who talked about it. So, when I searched for the project, I also sought to include myself in a group, to socialize. [Prior to DV Na Trilha], I felt a little bit away from my old friends and also people of the opposite sex, I felt estranged from all and without friends and social activities that I could be included in. It is essential to be physically active, but also to socialize.

Previous research has documented that the acquisition of visual impairments can lead to social limitations that can affect perceived quality of life (Coyle, Steinman, & Chen, 2017). Research further suggests that young adults with visual impairments tend to become more socially isolated the longer they are out of school (Gold, Shaw, & Wolffe, 2010; Wagner, Newman, Cameto, Garza, & Levine, 2005), as was affirmed by the comments made by Vitor, whose visual impairment occurred while he was of school-age. Guilherme described previous feelings of social isolation and friendship angst that lends support to findings from previous research. Fortunately, Guilherme suggested that he believed his own social isolation and friendship issues were resolved because of his engagement in structured physical activity programming. It is clear from Vitor and Guilherme that they experienced meaningful social benefits that stemmed from their involvement in structured physical activity through DV Na Trilha and extended to their everyday life.

Perceived physical activity impediments

Time restrictions have been identified by researchers as potential deterrents to physical activity engagement among adults with visual impairments in the Netherlands (Jaarsma et al., 2014) and the United States (Lee, Zhu, Ackley-Holbrook, Brower, & McMurray, 2014). Likewise, when initially asked what prevented them from engaging in more physical activity, each participant in the current study succinctly responded with the word *time*. In addition to time, a number of concerns that impeded physical activity participation emerged upon further prompting, such as accessibility and stereotypic beliefs. For example, Vitor explained that he had wanted to begin weight training at a local gym for a number of years, but was unable to do so because of transportation (accessibility) issues. Transportation issues have previously been reported as the number one environmental factor that discourages physical activity among adults with visual impairments (Jaarsma et al., 2014). However, Vitor stated that this issue had been alleviated recently with the advent of Uber (an increasingly popular and expanding privately owned transportation [car service] network company). He explained that:

> I was not practicing [weight training] because transportation was a barrier for me at the time. Then, Uber came

> to Brasília about a year ago and everything changed for me. Today, I do everything with Uber. For me [transportation] was a barrier, and a barrier that existed because I am blind. If it were not [for Uber], I would decrease participating [in weight training] dramatically.

Vitor explained how Uber provided new access to him to his preferred physical activity opportunity. However, Bernardo recognized that Uber was not something that was accessible throughout Brazil, and he suggested that "if you ask this question to other people in other areas of Brazil, those who are visually impaired from other economic areas, I believe the answer would be different." Vitor agreed, explaining that "there are blind people who do not yet have this awareness that they can leave their small area. We are in a capital [and have access]; some cannot leave their state of comfort or current reality." The conversation between Bernardo and Vitor shed light on how their experiences regarding accessibility and transportation as individuals with visual impairments in a large and modern city may differ from the experiences of others living elsewhere.

In addition to time and accessibility issues, stereotypic beliefs were also voiced among participants as a substantial barrier to physical activity engagement. Although the participants were jovial throughout the interview process, their tone became serious when discussing their experiences with stereotypic beliefs of stakeholders such as physical activity instructors. In a direct exchange with Bernardo, Vitor described situations where teachers or instructors were not expecting him to succeed in physical activities, and that he had to act more assertively in his attitude toward them in order to engage in activities. He stated that "if it were not for my disability, I would not have to impose myself so much. But by being firmer I think we're going to break any biases." Bernardo's response affirmed this statement; he suggested that "[sighted] people . . . will never treat people with disabilities naturally." Instances where stereotypic beliefs of stakeholders influence physical activity experiences of individuals with visual impairments are not unique to the existing literature. For example, elite athletes with visual impairments have described feelings of frustration and being limited during physical activity experiences as youths because of stereotypic beliefs of stakeholders (Haegele, Famelia, & Lee, 2017). Contrary to previous literature, however, Vitor said that in order to achieve his goals in physical activity, taking an assertive and affirmative tone toward stakeholders has allowed him to continue to engage in his preferred activities. For him, the autonomy and choice associated with adulthood made his physical activity more enjoyable than when he was younger, since he is now able to select the trainers with whom he works. He explained:

> [When I was] in school, I think teachers in general did not have an environment that was prepared for people with disabilities. Usually in schools, people who see did not allow effective participation for others [those with visual impairments]. So, we stayed on the sidelines or did an extremely alternative and different activity than the rest of the class.

> Nowadays, the picture is different because I choose the teachers[, and] the people who instruct me in various activities want to help me practice. If the person is open to learning new ways of doing things, if he or she is available and willing to adapt, it will be [a] pleasant [experience].

Vitor's comments are consistent with previous literature that has exposed negative feelings about school-based physical activity among individuals with visual impairments based on interactions with stakeholders (Haegele, Famelia, & Lee, 2017; Haegele, Sato, Zhu, & Avery, 2017). However, his experiences with choosing instructors as an adult were previously absent from the extant literature. These embodied experiences provide important insight into a transition in autonomy and choice from youth to adulthood among those with visual impairments and how this transition can enhance physical activity engagement. Overall, the present study's findings show what a cohort of Brazilian adults with visual impairments ascribe to health-related physical activity engagement. These findings are consistent with research conducted elsewhere (Phoenix et al., 2015). Further, the men in this inquiry explained how their engagement in physical activity helped alleviate social issues that they had previously experienced. However, they also identified a number of obstacles that they experienced when attempting to engage in physical activity, including time restrictions, accessibility issues, and stereotypical beliefs of others in society. It is encouraging to see that some of these obstacles are being ameliorated through advances in technology, such as the advent of Uber decreasing transportation and accessibility issues.

Limitations

There are several limitations to this study. First, all participants were adults with visual impairments living within the city limits of Brasília, Brazil, which limits the transferability of the findings of this study to a specific population within a narrow geographic area within Brazil. Thus, these findings may not be applicable to individuals with visual impairments living outside of large cities, or in other areas of the country. Although the findings may not be transferable to all parts of Brazil, there may be other large cities in Brazil (such as Salvador and Sao Paulo) or in other South American countries (such as Lima, Peru, and Quito, Ecuador) that are similar in some ways, which may yield individuals whose lived experiences align with those described in this study. Second, this study included a relatively small ($N = 3$) sample size. However, qualitative studies focus on in-depth explorations of small groups or even single cases (Patton, 2002), and the participant sample was purposely small in the current study to preserve meaningful particularities of the participants' experiences (Smith et al., 2013). Last, all data were collected during one 120-minute-long group interview. Thus, prolonged engagement, a qualitative credibility measure that includes multiple, in-depth interviews or repeated, substantive observations (Brantlinger et al., 2005), was not achieved, and results should be approached with this concern in mind. In spite of these limitations, we propose that the innovation of this exploratory study is the exploration of

middle-aged males (a group infrequently studied) in an under-researched geographic area, which provides an important contribution to the current literature.

Conclusions

Research indicates that adults with visual impairments tend to spend less time engaging in physical activities than do their sighted peers (Holbrook et al., 2009; Marmeleira et al., 2014). Understanding how adults with visual impairments, particularly those living in under-researched areas (such as Brazil), experience physical activity can help provide strategies to encourage participation throughout the lifespan. Thus, the need for additional research examining geographic and cultural factors that influence the lives of individuals with visual impairments in physical activity contexts that would replicate or expand on this study should be stressed. Furthermore, programs targeting physical activity promotion for adults with visual impairments, particularly those in major Brazilian cities, should promote the aforementioned benefits of engaging in physical activity programs while attempting to manage potential obstacles that would discourage individuals from being able to live a physically active lifestyle.

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Justin A. Haegele, Ph.D., *assistant professor, Department of Human Movement Sciences, Old Dominion University, 2009 Student Recreation Building, Norfolk, VA 23529; e-mail: jhaegele@odu.edu.* ***Samuel R. Hodge, Ph.D.,*** *professor, Department of Human Sciences, The Ohio State University, A-254 Physical Activity and Education Services Building, 305 Annie and John Glenn Avenue, Columbus, OH 43210; e-mail: hodge.14@osu.edu.* ***Paulo Gutierres Filho, Ph.D.,*** *assistant professor, Faculty of Physical Education, University of Brasilia, Asa Norte, DF, Brazil; e-mail: profgutierres@gmail.com.* ***Nillianne Ribeiro, B.S.,*** *graduate student, Faculty of Physical Education, University of Brasilia, Asa Norte, DF, Brazil; e-mail: nilliannecharles@gmail.com.* ***Christian Martínez-Rivera, M.S.,*** *doctoral student, Department of Human Sciences, Columbus, OH; e-mail: martinez.595@osu.edu.*

