



Published in final edited form as:

*Health Promot Pract.* 2015 January ; 16(1): 109–114. doi:10.1177/1524839914527451.

## Patient Perspectives on the Hula Empowering Lifestyle Adaptation Study: Benefits of Dancing Hula for Cardiac Rehabilitation

Gregory G. Maskarinec, PhD<sup>1</sup>, Mele Look, MBA<sup>1,3</sup>, Kalehua Tolentino, BA<sup>1</sup>, Mililani Trask-Batti, MPH<sup>1</sup>, Todd Seto, MD, MPH<sup>2</sup>, Mapuana de Silva, BA<sup>3</sup>, and Joseph Keawe'aimoku Kaholokula, PhD<sup>1</sup>

<sup>1</sup>University of Hawai'i, Honolulu, HI, USA

<sup>2</sup>Queens Medical Center, Honolulu, HI, USA

<sup>3</sup>H lau M hala 'Ilima, Kailua, HI, USA

### Abstract

**Background**—The Hula Empowering Lifestyle Adaptation Study, funded by the National Institute on Minority Health and Health Disparities, was a 5-year research trial evaluating the impact of the traditional Native Hawaiian dance form, hula, as an exercise modality for cardiac rehabilitation, compared with usual care, on individuals recently hospitalized for a cardiac event or who had recently undergone coronary artery bypass surgery.

**Method and results**—Seeking to learn what physical, mental, spiritual, and social effects the intervention may have had for participants, we interviewed 20 of a total of 35 patients who were enrolled in the dance arm of the study. Classical thematic triangulation analysis was used. Participants recognized that hula's coordination of body, mind, and spirit as a group activity deepened their appreciation of and connections to Hawaiian culture. This was true for those who were Native Hawaiian, connecting to their own cultural heritage, as well as for non-Native Hawaiians, who found that it improved their appreciation of the surrounding cultural traditions of the host culture where they now live.

**Conclusions**—Not only was hula a safe activity that improved functional capacity, participants also regarded its significant sociocultural aspects—even for participants who are not Native Hawaiian—as enhancing its value and meaningfulness. Learning the words of well-known Hawaiian songs provided additional long-term cues that encouraged “ownership” of the therapy and acted as practical reminders of the importance of exercise and lifestyle moderation while also offering new spiritual connections to the surrounding social environment.

## Keywords

Native Hawaiians; dance; hula; cardiac rehabilitation; research to practice links; social cognitive theory

---

## BACKGROUND

The World Health Organization reports that, despite being largely preventable, cardiovascular diseases are the leading cause of death and disability worldwide (Mendis, Puska, & Norrving, 2011), in both developed and developing countries (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006; Roger et al., 2011). Native Hawaiians and other Pacific Islanders bear a disproportionate burden of coronary artery disease and its risk factors, including mortality rates that are among the highest in the United States (Aluli, Reyes, & Tsark, 2007; Mau, Sinclair, Saito, Baumhofer, & Kaholokula, 2009). After hospitalization for major cardiac events, it has been well established that participation in cardiac rehabilitation (CR) improves physical functional status, quality of life, and long-term outcomes (Jolliffe et al., 2001; Wenger et al., 1995). Despite these benefits, CR remains underused, with only 10% to 20% of eligible patients referred to CR (Jolly & Greenfield, 2004; Leon et al., 2005; Valencia, Savage, & Ades, 2011).

Besides the common barriers of lack of motivation, inconvenience, availability, and lack of physician support, additional barriers have been identified as often faced by minority patients: (a) negative prior experience with the health care system, (b) need for support from social network and family, (c) fatalistic beliefs, (d) a poor understanding of CR, and (e) a preference for stress reduction rather than standard exercise methods (Chauhan, Baker, Edwards, & Hann, 2010; Jolly & Greenfield, 2004). At the time of this study, there was no hospital-based CR facility in the entire state. Social support has been demonstrated to be an effective component of CR therapy (Oxman & Hull, 1997; Shen, McCreary, & Myers, 2004), but new intervention strategies are needed to improve acceptability (e.g., applicable to the lived experiences of people), accessibility (e.g., easily accessed), and adherence (e.g., more likely to follow prescribed regimen; (Gersh, Sliwa, Mayosi, & Yusuf, 2010).

Integrating physical activity with social support, dance therapy can be an effective exercise modality using movement to support the physical and emotional well-being of patients while improving their health-related social supports (e.g., emotional and instrumental support). For example, ballroom dancing, when used as a foundation for CR, has been shown to improve exercise capacity and quality of life, utilization, and adherence (Belardinelli, Lecalaprice, Ventrella, Volpe, & Faccenda, 2008); a similar result has been demonstrated for tai chi (Yeh et al., 2004). When culturally appropriate (an issue of acceptability), patients may discover a memorable integration of mind, body, and spirit that enhances their motivation toward recovery and contributes to their quality of life. Culturally congruent CR programs that offer alternate forms of physical activity may be more attractive and familiar to patients than traditional exercise (e.g., treadmill, stationary bicycle) and may result in better adherence. However, very few programs have attempted to incorporate cultural practices into CR, nor have there been any other programs that have tried to use hula for other health care

interventions (though it may be useful in addressing hypertension and stroke rehabilitation, and perhaps also issues of mental health and substance abuse.)

Hula, the traditional dance form of Kānaka ʻŌiwi, the indigenous people of Hawaiʻi, may be effective for CR as it is consistent with the goals of CR exercise training: it has low intensity, is prolonged, and can achieve 70% to 80% of the maximal predicted heart rate three times a week. Readers unfamiliar with hula may wish to watch videos available on the Internet (Merrie Monarch, 2005, 2010) Originally performed to convey history and spiritual beliefs, hula is now commonly practiced as a form of cultural expression, and is composed of specific controlled rhythmic gestures symbolizing the meaning of the accompanying chants and songs. Hula is practiced by both men and women of all ages, and there are over 1,000 schools of dance teaching hula worldwide (Mele.com, 2010). Despite its wide dispersal, hula remains distinctly Hawaiian and is seen as a marker of ethnic identity for Native Hawaiians, who continue to recognize its spiritual connections to traditional views of healing and wellness (Kaeppler, 1993; Itagaki & Lependu, 1997). Hula educators, known as *kumu hula*, are recognized as guardians of the tradition and as cultural leaders, and they command significant respect from their students, who are encouraged to provide support to each other and to establish a familial relationship as “hula brothers” and “hula sisters.” This type of consistent social support has been recognized as making an important contribution to recovery from surgery, contributing to functional status and to quality of life, with a reduction in mortality by 20% to 32% when compared with medical therapy (O’Conner et al., 1989).

## METHOD

The Hula Empowering Lifestyle Adaption Study was a 5-year research evaluation of a CR intervention using a traditional Native Hawaiian dance form, hula, as an exercise modality, a joint project of the Queen’s Medical Center, Honolulu, and the Department of Native Hawaiian Health of the John A. Burns School of Medicine, University of Hawaiʻi. The theoretical framework of the study draws on social cognitive theory, which has shown that social support reduces vulnerability to stress, depression, and physical illness (Bandura, 1998; Duncan & McAuley, 1993). Patients who had recently undergone coronary artery bypass surgery or had recently been hospitalized for a major cardiac event such as a heart attack were placed in either a 12-week hula intervention (three classes per week) or a control group using standard care, which in Hawaiʻi at that time was physician recommendation for low- to moderate-intensity aerobic activity, and educational material, in order to determine whether those dancing hula demonstrated better functional capacity and exercise tolerance than individuals randomized to the control group.

Before the project was initiated, community-based participatory research principles guided a complex collaboration confirming that both patients and *kumu hula* believed that hula-based CR would be both culturally attractive and effective and would provide physical, emotional, social, and spiritual benefits (Look, Kaholokula, Carvalho, Seto, & de Silva, 2011). The project was reviewed and approved by the University of Hawaiʻi’s and the Queen’s Medical Center’s institutional review boards.

Seeking to determine whether the participant themselves perceived that these potential benefits were achieved, we interviewed 20 (10 males and 10 females) from a total 35 patients who were enrolled in the dance arm of the study and whose ages ranged from 50 to 81 years. Given the challenge of enrolling participants, when the number computed as needed for statistical significance was reached, the study ceased to enroll participants. All 35 were contacted, those not included either were unavailable or declined. Ethnicity was not limited to Native Hawaiians or Pacific Islanders (Samoans and Micronesians) but also included Asian Americans (Chinese Americans and Japanese Americans), Filipinos, and Caucasians. Of the 20 interviews, 12 were done immediately as the intervention concluded, whereas 8 were done a year later, to gauge long-term retention of lessons learned and to encourage further retrospective reflection on the program. We expected that the two groups of patients interviewed would seem more like separate populations, and planned to compare them, but their responses in the interviews were essentially indistinguishable, so they have been treated as a single population.

Classical thematic triangulation analysis (Krueger & Casey, 2000) was used to elicit primary and secondary themes, but there was an unexpectedly high convergence of themes, with participants, whether interviewed immediately or a year later, all identifying similar, and similarly positive, aspects of the intervention. Direct quotes from 16 of the 20 participants interviewed are included in this study to demonstrate the uniformity in their responses.

## RESULTS

Both immediately after the intervention and after the lapse of a year, the patients' enthusiasm for the therapeutic modality was overwhelmingly positive. The experience was vividly remembered with similarly positive overall responses by everyone interviewed. All 20 participants narrated thoughtful, detailed reflections on the effects they perceived of the intervention on their physical, mental, spiritual, and social well-being. They emphasized that it was specific aspects of hula and the cultural practices that made the project particularly memorable, recognizing its coordination of body, mind, and spirit as a group activity, while often connecting participants to aspects of their own cultural heritage, if they are Native Hawaiians, or for those not native to Hawai'i, to the surrounding cultural traditions of the host culture where they now live. This was stressed by a Chinese American male in his mid-60s (012):

Hula represents, I think more than just a physical entity of learning the steps and the movements with the rest of your body, with the hands and everything. It's a mental thing and a spiritual thing. You gain a much greater appreciation for the Hawaiian culture.... I think there's an invisible part of it that you don't really see. It really helps your conditioning and your heart. And not only from the standpoint of the physicality, but also the mental promise that it can bring.

Interviews were loosely structured around a dozen questions, though participants were encouraged to reflect freely on their experiences. When asked what the best part of being in the class was, one participant, a Caucasian male in his early 60s, typically reflected on the sense of being part of something and finding "added value" in the cultural aspects beyond simply the exercise:

I think just being relaxed, being a part of a thing, the people there let you feel very warm, and it was very low-key, enjoyable. We did a song that stuck with me all day or even all week, and I'd be humming or whistling that song. They give you literature behind it and so forth, what it's about, who wrote the song, or why, what it means, cause everything means something. (036)

Many of those interviewed noted that it felt therapeutic to meet other people who were also attempting to recover from a similar health event and to participate with them in a common activity. A year after it ended, another participant, a Japanese American woman also in her 60s (004) reaffirmed that the best part of the intervention was “the camaraderie and knowing that everybody else is in the same position. You know we all come from the same background with a cardiac problem. And so that was really a solace.”

Seeing and encouraging others with worse health problems than their own, patients more frail, elderly, or with additional health problems, such as diabetes, but who nevertheless strove to recover, was not just heartening; for several participants it nourished a spiritual quality of caring for and encouraging one another, and put their own problems into perspective. As a Native Hawaiian in his early 60s said (045): “I thought I was the sickly one. I was—but when, when I got to meet everybody got to know all their . . . it was like—I was there with a toothache.” Chance encounters a year later reinforce this sense of a shared identity. As a 60-year-old Native Hawaiian woman (007) observed, “The first thing, when we see each other, we say ‘eh, we’re still alive!’ with a big smile. That says it all.”

Everyone developed respect for the patience, experience, understanding, and teaching skills of the two kumu hula for the study, one of whom is distinguished in the community as the recipient of many awards for cultural accomplishments. Participants admired the way that the kumu mixed strictness in seeking to teach the proper chants, rhythms, and gestures of hula while showing compassion for their physical limitations, progressing slowly toward more complex routines and teaching the meaning of the chants and gestures throughout. A younger Native Hawaiian woman summarized (044): “When she walks in the room—her presence in the room—it’s like sunshine—it’s just so happy, that’s how I feel.” Similarly, a Caucasian woman reported (041), “Of course MS [the kumu hula] was the catalyst that did it all. She is just incredible woman! I can’t imagine another hula instructor coming with as much heart as she did. She made it all happen.” A year later, another Native Hawaiian participant (007) still vividly recalled,

Another thing too is that the teacher explained each session of what it meant, the rain, the flowers, how she felt, why she wrote the song that way so when you started dancing you could really express it in your movement and in your hands.

When asked the ways in which the hula classes affected physical, mental, emotional, or spiritual quality of life, participants again emphasized that the cultural aspects of the intervention were very important to them. Another Caucasian participant (002) expressed appreciation for learning through hula the key Native Hawaiian concept of caring for the earth, *m lama ‘ ina*, and felt that this deepened her emotional and spiritual well-being. A Caucasian male in his 50s was surprised at the effort that hula requires (030):

People don't realize that hula is hard work, it really does work the heart. Even when I first signed up for the class, I was a little reluctant, like to myself I was thinking what is this going to do for me, but it takes work. Hula looks very easy when you watch it, but it is not at all.

Physically, improvement with breathing, endurance, muscle strength, and flexibility and coordinating the music and the chanting were all mentioned as experienced during the intervention, as were improvements in memory, cultural insight, concentration, and mental stimulation and just "feeling better overall." A Filipino woman in her early 50s observed (039),

It got you working mentally: remembering the steps, and remembering the moves, and concentrating on the beat, and everything.... All of us just got stronger as the class went on. When you're able to lift your hands higher, when you're able to just keep up with the pace, you know that you're getting stronger, physically more fit. It was good. That was a way to monitor our own progression, was "oh I can lift my hands a little higher and it feels ok."

Participants were also asked to identify the hardest part of being in the class, and several mentioned that remembering the Hawaiian words posed a mental challenge, as did their lack of dancing coordination, though both challenges contributed to participants' greater appreciation of the exercise. Hula was more challenging to learn than participants expected. As a Caucasian woman in her 70s observed (042),

I was coming into this to learn hula-the moves. But I didn't know that we would also be learning the Hawaiian language and have to think.... You are learning something and you are doing it with other people.

Likewise, a Samoan in her 40s commented (038),

I thought it [hula] was going to be easy. You know you grow up here, you're local, you should know. I thought it was going to be easy. But I was surprised, I mean, I pick up things quickly, but I was surprised that it wasn't as easy as I thought it was going to be. It's everything. I thought I was coordinated, some parts I really wasn't.

A Chinese American in his mid-60s also explained (012), "The hula, it means a lot more to me now that I know how difficult it is, and how you have to be totally synchronized mentally with the music."

One participant, a Caucasian woman in her 60s, found it embarrassing to dance in her present condition (002): "Being willing to expose my incompetence in dance. And at the time I was not yet wearing my prosthesis and they wanted us to take a picture and I just burst into tears." The same participant was, however, thankful that she was invited to participate: "I am glad that you did not limit it to Native Hawaiians. I think there was enrichment in sharing that with the larger culture." An 80-year-old Chinese American male (010) commented,

The hand and feet coordination was hard. I think its good as far as the feet work; it helps with balance. As you grow older, your balance is not so good. Just like at the

gym, they teach us how to fall. And we practice that a lot. I felt good after each class. You feel invigorated.

This was succinctly expressed by a Native Hawaiian (043): “If I don’t do the hula, then I’m so lazy and have no motivation. After the class I feel I can take on the world.”

## CONCLUSIONS

Hula was a safe activity that improved functional capacity of the participants. By involving important sociocultural aspects, such as teaching the words to the Hawaiian language chants and songs and connecting their meanings to the expressive dance motions, the value and impact of this intervention as perceived by its participants were enhanced. One Caucasian woman in her 60s clearly summarized the intervention (041):

We not only had to learn hula steps and hand motions, we were learning a foreign language, we were learning the meaning of that foreign language, we learning to appreciate the culture, if we didn’t already. We, at least I, have a much stronger appreciation for the culture. I was born here, I’ve been surrounded by it all my life, but it was presented in a new way to me, that I totally appreciate. My mind was having to work harder than it’s worked in a long time.... I can’t talk about it without welling up with tears in my eyes. It was so very, very special.

Learning the words of well-known Hawaiian songs, often on the radio or in public spaces, such as shopping malls or seen danced on television, provided additional long-term cues that encouraged “ownership” of the therapy and acted as practical reminders of the importance of exercise and lifestyle moderation while also offering new spiritual connections to the surrounding social environment. This was specifically observed by a Filipino woman in her 40s (017), who after a year, plays at home the recordings that were used as part of the intervention, dances a bit, and finds that it improves her outlook on life:

But I’m thinking about my kids, I don’t want to die yet; that’s the only thing! Sometimes it was so emotional but when I’m thinking about my kids, I’m thinking that maybe I can survive. And the hula helps me when I’m listening to the hula songs at home and just like when I’m home alone and start thinking not good, I go and play my hula songs and start dancing little bit to forget thinking the bad things.

The additional emotional and spiritual benefits of hula that were anticipated in the focus groups before the study was undertaken were affirmed, for example by another Filipina in her early 50s (039):

I think in some ways it was beneficial emotionally and spiritually as much or maybe even more than the physical part. Some people shared that they were feeling really down, because when they went home from surgery, and their activities are limited, basically you just kind of wonder, “Why is this happening to me, why me, how am I going to live for the rest of my life with this condition, am I going to be sore every day, am I going to be tired like this all the time?” And basically when we went to the classes, everyone just accepts you at that level, for that moment, for that day, and no one expects any more of you than what you can give. It just lifted

us up. Every time we were coming to the class, it gave us something to look forward to.

This sense that hula as CR could be so much more than just physical exercise clearly suggests that culturally resonant interventions have a much stronger impact than do traditional forms of CR. This finding deserves additional testing, not only with hula-based CR but also with other ethnic practices that promote integrated wellness and enduring cultural values. Our study has shown that initiation and implementation of a culturally effective CR program, through the use of the traditional Native Hawaiian dance form of hula, is an innovative link connecting research to practice. Using a traditional dance form for CR, and possibly for other health conditions, is a relatively simple, adoptable intervention that provides benefits beyond the physical, extending to emotional, mental, social, and spiritual lives of the patient. This is an approach that may be attractive to and effective with other minority populations who experience health disparities similar to those of Native Hawaiians, using their local, traditional dance practices.

## Acknowledgments

The authors particularly wish to thank the participants of the HELA study for their cooperation with the interviews conducted for this study. Funding for this project was received from the National Institute on Minority Health and Health Disparities of the National Institutes of Health, Grant No. P20MD000173. Mahalo nui is tendered to Patience Namaka Bacon, Dr. Kekuni Blaisdell, and Dr. Fredric Pashkow.

## References

- Aluli NE, Reyes PW, Tsark J. Cardiovascular disease disparities in native Hawaiians. *Journal of Cardiometabolic Syndromes*. 2007; 2:250–253.
- Bandura A. Health promotion from the perspective of social cognitive theory. *Psychology & Health*. 1998; 13:623–649.
- Belardinelli R, Lacalaprice F, Ventrella C, Volpe L, Faccenda E. Waltz dancing in patients with chronic heart failure: New form of exercise training. *Circulation: Heart Failure*. 2008; 1:107–114. [PubMed: 19808280]
- Chauhan U, Baker D, Edwards R, Hann M. Improving care in cardiac rehabilitation for minority ethnic populations. *European Journal of Cardiovascular Nursing*. 2010; 9:272–277.10.1016/j.ejcnurse.2010.03.004 [PubMed: 20418166]
- Duncan TE, McAuley E. Social support and efficacy cognitions in exercise adherence: A latent growth curve analysis. *Journal of Behavioral Medicine*. 1993; 16:199–218. [PubMed: 8315646]
- Gersh BJ, Sliwa K, Mayosi BM, Yusuf S. Novel therapeutic concepts: the epidemic of cardiovascular disease in the developing world: Global implications. *European Heart Journal*. 2010; 31:642–648. [PubMed: 20176800]
- Itagaki, JM.; Lependu, L. *N n I n Loea Hula* [Look to the Hula resources]. Honolulu, HI: Kalihi-Palama Culture & Arts Society; 1997.
- Jolliffe J, Rees K, Taylor RRS, Thompson DR, Oldridge N, Ebrahim S. Exercise-based rehabilitation for coronary heart disease. *Cochrane Database System Review*. 2001; (1):CD001800.10.1002/14651858
- Jolly K, Greenfield SM. Attendance of ethnic minority patients in cardiac rehabilitation. *Journal of Cardiopulmonary Rehabilitation*. 2004; 24:308–312. [PubMed: 15602149]
- Kaepler, AL. *Hula Pahu*. Honolulu, HI: Bishop Museum Press; 1993.
- Krueger, RA.; Casey, MA. *Focus groups: A practical guide for applied research*. 3. Thousand Oaks: Sage; 2000.
- Leon AS, Franklin BA, Costa F, Balady GJ, Berra KA, Stewart KJ, Lauser MS. Cardiac rehabilitation and secondary prevention of coronary heart disease: An American Heart Association scientific

statement from the council of clinical cardiology. *Circulation*. 2005; 111:369–376. [PubMed: 15668354]

- Look MA, Kaholokula JK, Carvalho A, Seto T, de Silva M. Developing a culturally based cardiac rehabilitation program: The HELA study. *Progress in Community Health Partnerships: Research, Education, and Action*. 2011; 6:103–110.
- Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJL. Global and regional burden of disease and risk factors. *Lancet*. 2006; 267:1747–1757. [PubMed: 16731270]
- Mau MK, Sinclair K, Saito EP, Baumhofer KN, Kaholokula JK. Cardiometabolic health disparities in Native Hawaiians and other Pacific Islanders. *Epidemiology Review*. 2009; 31:113–129.
- Mele.com. Halau Hula 2010. Retrieved from <http://www.mele.com/resources/hula.html>
- Mendis, S.; Puska, P.; Norrving, B., editors. Global atlas on cardiovascular disease prevention and control. 2011. Retrieved from [http://www.who.int/cardiovascular\\_diseases/publications/atlas\\_cvd/en/](http://www.who.int/cardiovascular_diseases/publications/atlas_cvd/en/)
- Monarch, Merrie. Halau Na Kamalei—Kona Kai Opua I. Hula Competition 2005. 2005. [Video]. Retrieved from <http://www.youtube.com/watch?v=Gdc1IMNAMiY>
- Monarch, Merrie. Kahiko Halau Mohala Ilima. Hula Competition 2010. 2010. [Video]. Retrieved from <http://www.youtube.com/watch?v=EQFPXVp1GFo>
- O’Conner GT, Buring JE, Yusuf S, Goldhaber SZ, Olmstead EM, Paffenbarger RS, Henkens CH. An overview of randomized trials of rehabilitation with exercise after myocardial infarction. *Circulation*. 1989; 80:234–244. [PubMed: 2665973]
- Oxman TE, Hull JG. Social support, depression, and activities of daily living in older heart surgery patients. *Journal of Gerontology. Series B, Psychological Sciences and Social Sciences*. 1997; 52:1–14.
- Roger VL, Go AS, Lloyd-Jones DM, Adams RJ, Berry JD, Brown TM, Wylie-Rosset J. Heart disease and stroke statistics: 2011 update. A report from the American Heart Association. *Circulation*. 2011; 123:e18–e209. [PubMed: 21160056]
- Shen BJ, McCreary CP, Myers HF. Independent and mediated contributions of personality, coping, social support, and depressive symptoms to physical functioning outcomes among patients in cardiac rehabilitation. *Journal of Behavioral Medicine*. 2004; 27:39–62. [PubMed: 15065475]
- Valencia HE, Savage PD, Ades PA. Cardiac rehabilitation participation in underserved populations. Minorities, low socioeconomic, and rural residents. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 2011; 31:203–210. [PubMed: 21705915]
- Wenger, NK.; Froelicher, ES.; Smith, LK.; Ades, PA.; Berra, K.; Blumenthal, JA.; DeBusk, RF. Clinical Practice Guidelines No 17. Washington, DC: Agency for Health Care Policy and Research and National Heart, Lung, and Blood Institute; 1995. Cardiac rehabilitation as secondary prevention.
- Yeh GY, Wood MJ, Lorell BH, Stevenson LW, Eisenber DM, Wayne PM, Phillips RS. Effects of tai chi mind-body movement therapy on functional status and exercise capacity in patients with chronic heart failure: A randomized controlled trial. *American Journal of Medicine*. 2004; 117:541–548. [PubMed: 15465501]