

From helpless to hero: Promoting values-based behavior and positive family interaction in the
midst of Covid-19

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Abstract

Parents managing their home environments during government ordered stay-at-home periods are likely to need new skills for occupying their children's time with activities which promote health and emotional well-being. Moreover, parents and children know they need help managing these circumstances. Perhaps for the first time, behavior analysts hold the reinforcers for increasing parental involvement in effective child-rearing practices. In fact, behavior analysts can help parents enlist their children in managing the household by framing their behavior in terms of hidden superpowers. In the current paper, we argue that behavior analysts have a range of tools to offer which are grounded in evidence-based principles, strategies, and kernels, or essential units of behavioral influence. When combined into scheduled daily practices and invoked by children taught to see their use of the tools as nothing short of heroic, these practices function as vaccinations that inoculate families against toxic and unsafe behaviors.

Keywords: COVID-19, kernels, values, parenting, Acceptance and Commitment Training, PAX Good Behavior Game

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Editor's Note

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Introduction

Children's books and Pixar movies are filled with feel-good stories about kids who save the world or take out bad guys threatening their homes. However, when you ask most children what their superpowers are, you may be met with a quizzical blank stare. "I'm not a hero," most children will say with an embarrassed grimace. Our stance, and one we hope you will adopt, is that this is far from the truth. In this paper, we present simple practices that behavior analysts and related personnel can teach to make everyone in the family a hero. The practices we present are founded upon evidence-based principles, strategies, and kernels that can be combined in clusters that serve to vaccinate against toxic and unsafe behavior. Some of the behavioral vaccines, kernels or practices have been used to mitigate serious social crises: the Gulf War (Embry, 1991), Twin/Towers and 911 (Embry, 2006), and school shootings in 1990s (Embry et al., 1996; Krug et al., 1997). Others have been applied to problems related to parenting (e.g., Murrell et al., 2008), parenting children with autism (e.g., Pergolizzi et al., 2018); treating rule inflexibility in

children with autism (Szabo, 2019), and behavioral treatment in the context of adolescent post-traumatic stress (e.g., Woidneck et al., 2014). If ever we needed heroes who could administer these vaccines and once vaccinated, go forth and inoculate others, it is now.

Perhaps no one is *actually* born possessed with superpowers, but with a nudge from behavior science, anyone can respond to life's unknowns with powerful response persistence, empathy, good will, and patience. It will take small, daily acts of heroism to set in motion the conditions under which families will find peace during periods of stay-at-home orders. Given the vast unknowns confronting us, these small acts, performed each day, could mean the difference between a family merely surviving and thriving.

Among those unknowns surrounding the current coronavirus pandemic is the length of time families will be asked or required to stay home. For many, staying home is an unprecedented demand. Day care, school, sports, clubs, playdates, and parties which ordinarily occupy time before dinner and bedtime are off limits. Many outlets are racing to post activities for parents to try with their children. Although these strategies could be effective for some children, they may inadvertently produce unwanted outcomes for others. For example, Amlen (2020) suggested quarantined parents ask their kids to play *20 Questions*, a guessing game in which the aim is to identify a person, place, or thing by asking fewer than 20 questions. The game requires several component verbal repertoires, including intraverbal conditional discrimination and relational responding with respect to arbitrary conventional cues for size, hierarchy, distinction, and coordination. Social skills required include waiting to speak and tolerating ambiguity or periodic losses. Although fun for some typically developing children who already demonstrate these skills, others receiving behavior analytic services may engage in

aggression or escape behaviors during this game due to the complexity of the verbal skills involved or the advanced social requirements for delayed gratification and friendly competition.

An additional concern involves the suggestion of games and activities without instructions for increasing prosocial, flexible, and compassionate responding in learners that lack these skills. For example, Osmanski (2020) lists several games such as setting up a treasure hunt, training the dog, and playing charades. Any one of these could be useful for children with a wide range of skills, but without guidelines for how to teach the rules, establish norms of behavior, adapt the rules for different family members, or remind and reinforce desired behavior, the suggestions could potentially lead to frustration or behavioral escalation.

The important role that behavior analysts play in supporting families during periods of social distancing and lockdown cannot be overstated. The West African Ebola epidemic of 2014-2016 followed just twelve years after the nation ended a brutal civil war. Reports of child abuse during Ebola soared compared to those during the war, and importantly, the number of reported adverse childhood events that occurred in the home since then have not decreased (United States Department of State, 2011 - 2019). A behavioral interpretation of these figures would be that once parents learned the fastest way to decrease a child's unwanted behavior was to use corporal punishment, they resorted to this class of behavior even after the lockdown ended because the negative reinforcement it produced was immediate and certain. Since punishment does not directly teach an alternative response, it is possible that children's actions that led to these parent behaviors continued, thus potentially contributing to a loop of police-documented child abuse that persists to this day.

Fortunately, behavior analysts serving families during the coronavirus pandemic have access to a set of evidence-based best practices that are founded in the principles of behavior and

adaptable to varying skill sets within a family. Moreover, these practices are helpful for promoting cooperation, emotional resilience, empathy, and compassionate action. The best practices we refer to herein are composed of evidence-based kernels, or irreducible units of behavior-change technology that can be assembled into exercises that are easily adapted for children and adults with varying repertoires (Embry, 2004; Embry & Biglan, 2008). They can be put together into routine daily clusters that can be likened to behavioral vaccinations that cost nothing, are quickly taught and learned, and inoculate against unsafe or toxic behavior. We recommend behavior analysts teach parents to use kernels and combinations of kernels (practices) that are based on the following 11 established behavior change strategies:

1. Access to immediate, certain, high-magnitude social reinforcement
2. Feedback and discriminative stimuli that serve as reminders of the desired rules and routines
3. Graduated demands that build momentum to following the rules and routines
4. Alternatives to attention for unwanted behavior
5. Clear, firm responses to dangerous conduct and reinforcement for changing to nonhazardous behavior
6. Observation of thoughts as rules that can be differentially applied or dismissed as the context warrants
7. Observation of emotions as useful guides that do not demand immediate action
8. Flexible attention to the present moment
9. Alternate, non-exclusive ways of viewing self and others
10. Identification of values (statements that organize behavior toward powerful, durable reinforcers)

11. Committed action that is consistent with stated values

Categories of Evidence-Based Kernels

Behavior change strategies listed above form the foundation upon which evidence-based kernels are situated. Embry and Biglan (2008) describe four distinct categories of evidence-based kernels that are easily taught and used in clinical contexts. Kernels may alter the potency of behavioral consequences. For example, making a prize bowl transparent and just out of a learner's reach increases the value of the reinforcers found within the bowl. Alternatively, kernels may affect behavior primarily via antecedent control. A red card placed on the kitchen door when it is off-limits, and a green card placed on the door when it is okay to enter is an evidence-based kernel that decreases dangerous behavior and increases engagement in other activities. Kernels may also affect behavior by evoking relational framing. When a parent reinforces sharing by saying, "What you just did was great, Pietra; in this family we share because sharing is our superpower," they have promoted deictic framing, or perspective-taking with respect to the family unit. They have also facilitated their child's use of hierarchical framing – categorizing "sharing" as a prosocial behavior that is likely to be reinforced by other family members. And they have formed an augmental, "sharing is our superpower," a phrase that when repeated often, alters the value of giving things away and helps evoke this behavior. Finally, kernels may affect behavior through physiology. Getting the family together for a run or a yoga session increases everyone's heart rates and reduces adverse effects of being stationary within the house for long periods of time. Each of these kernels has an evidence base that is beyond the scope of this paper to include. For a more thorough explanation, see Embry and Biglan (2008).

Kernel-Informed Practices

Fundamental behavior change strategies and evidence-based kernels can be incorporated into daily kernel-informed practices that are easily taught with simple, scalable rules. We wish to emphasize that any of the practices that we recommend below can be focused as we suggest or refocused toward a different outcome that is more suitable to the context of a particular parent, child, or family. The practice categories we describe below include exercises that A) promote the use of schedules and routines, B) promote family values and norms, C) increase positive reinforcement, and D) serve as antecedents for prosocial behavior.

The practices we recommend, listed and categorized below, include games and strategies that invoke no less than two of the above kernels and are easily adapted to focus on others. In fact, the practices we list herein are important because of their robust flexibility; they can be reused frequently, changed in an infinite number of ways, and tailored to the needs of a range of users. Behavior analysts are encouraged to modify the practices as needed so that the right kernels are promoted at the right time with the right family and taught to others by the right family member (Paul, 1969).

We also encourage behavior analysts to go well beyond teaching these kernels to clients. We urge behavior analysts to spread these protective, preventive strategies widely through communities, organizations, and media. The whole point of handwashing as a public-health strategy is to reduce not only sepsis as described by Semmelweis (Pittet & Allegranzi, 2018) but also to reduce the epidemic. For example, Embry and colleagues used simple self-modeling stories to reduce pedestrian injuries to young children (Embry, 1984), which could be easily adapted to children helping keep a home “virus free” by washing their hands in a self-modeling story using mobile phone photos and a simple script (Embry, 1980).

Promote the Use of Schedules and Routines

1. Help Parents to Establish Clear Expectations

Research demonstrates providing verbal and visual reminders of rules can increase appropriate behavior at the level of the individual (e.g., Faul et al., 2012; Moore et al., 2019) and at the group level (e.g., Chinnappan et al., 2019; Hamrick et al., in press) in classroom settings. Together, these studies provide evidence that rules can help decrease problem behavior across various populations. This strategy of simply providing verbal and/or written reminders of rules is particularly useful as it involves low-effort behavior on the part of implementer. To whatever extent desired, the entire family can be involved in establishing acceptable rules to be followed within the household. An additional strategy would be to let children know that when they implement contingencies for each other, or remind each other of the rules, they are being heroic. Everyone needs a reminder once in a while. For example, most of us touch our faces often. We have been told that this is a dangerous practice, but without prompts regarding the expectation, we are likely to rub our noses and eyes, thus increasing the risk of coronavirus infection.

2. Activity Schedules

Activity schedules can be utilized to help promote independent behavior (e.g., McClannahan & Krantz, 1998), to increase on-task behavior (e.g., Bryan & Gast, 2000), and to create smooth transitions between activities (e.g., Dooley et al., 2001). Parents can be encouraged to construct interactive and visually stimulating textual and/or picture schedules to create structure in the home environment. This can help give structure around transitions around both typical home activities (e.g., getting ready in the morning) and not-previously-typical home activities (e.g., home-schooling, teleconferencing with teachers, etc.). In addition, to the extent possible, children can be

included in creating the schedule and be given a choice in the order of activities (Kern et al., 1998; Watanabe & Sturmey, 2003). Involving the children in the constructing of the schedule and providing them with choices may help promote a sense of independence and control over their own environment, especially at a time when there is little control over many other circumstances.

3. Teach Parents to Use Timers

Timers can be used in a variety of ways. One evidence-based strategy is called “Beat the Timer.” In this exercise, learners are instructed that if they complete tasks before the timer runs out, they win a prize. Beat the Timer can be programmed with independent, interdependent, or dependent contingencies (Adams & Drabman, 1995; Ball & Irwin, 1976). Be sure to set this up as a fun challenge and avoid a time-based requirement that may be stressful and result in negative punishment for “trying.” Timers can also be used to aid in transitions from one activity to the next and function as a visual or auditory cue for upcoming shifts among activities. The timer is a simple technology that can evoke appropriate behavior, increase independence of the learner, and decrease response effort on the part of the parent.

4. Tootles

Family members can be given a stack of cards with spaces for writing another person’s name and what they have done. They are instructed to look for others engaging in prosocial behavior and to write a “tootle,” or a praise note that can be posted on a wall, read aloud, or placed in a photo album of praiseworthy moments (Cabello & Terrell, 1994; Embry et al., 1996). During family conflicts and other stressful situations, offering a tootle for something a sibling does is a remarkably heroic act that runs counter to most

children's social conditioning and reinforcement histories. Yet doing so can defuse explosive situations and improve the likelihood of reciprocal reinforcement from others. Teaching children that giving tootles is a superpower and challenging them to try it and see what happens can improve their probability of contacting much needed reciprocal reinforcement from their brothers and sisters.

Promoting Family Values and Norms

1. Support Empathic and Perspective-Taking Behavior

Behavior analysts have begun to adopt strategies for teaching empathic responding and perspective taking with children diagnosed with autism (e.g., Schrandt et al., 2009). In addition, these behaviors may be useful among siblings, children to parents, parents to children, and among partners and other family members to create therapeutic support networks and help build tolerance for or alleviate stress across the family unit (Szabo, 2019; Arciniega et al., 2020; Szabo et al., 2020). For example, Arciniega et al. taught experimenters to use empathic statements when listening to the concerns of siblings that had been aggressive with children with autism and then taught the participants to use similar empathic statements when engaging in activities with their siblings with autism. To further supplement this skill, members of the family may be taught to first engage in value clarification exercises. For example, after drawing a coat of arms with four to six sections, family members can illustrate those aspects of their connection with each other that are of highest value to them (Asen & Scholz, 2009). Sections of the coat of arms could include images of superpowers that family members use to protect one another's health and well-being.

2. Five-Min Pause: Acting without Reacting

Stay-at-home orders are likely to increase the frequency of verbal conflicts between parents. Children observe the actions of their parents and if parent actions are reinforced, they are likely to imitate what they see. Parents may be negatively reinforced when using coercion in their interactions with each other, and thereby teaching their children to do the same. Behavior analysts should discuss the way that these practices are transmitted to their children through the parents unintentionally modeling them. Parents can therefore be taught to pause before responding to conflict or stressful disagreements with others. The practice of pausing when agitated can be discussed with children as a heroic family value and established as a norm that is immediately reinforced by adults (Szabo et al., 2020).

3. Jumble Jar

Sitting still and remaining at family meals may be challenging for many children because it is not clear what they will talk about and topics preferred by parents (e.g., latest news on the corona virus) may not be preferred by children. Jumble Jar provides structure to family meals and a simple way for members to connect with themselves and each other. A jar is filled with sentence starters, or “jumbles” to take turns pulling from the jar and discussing during meals (e.g., Price & Nelson, 2019). Family members should be instructed to use active listening skills, (e.g., “I hear you saying that you dream of going snorkeling because you want to learn about sea creatures”) and to ask respondents to expand on shorter answers that they offer. Here are a few examples:

- "Write two things you thought about doing that you can wait on & do some other time"

- "When I'm really down, my feelings are as big as a ____ and as heavy as a ____."
- "Something I used to be scared of but now I like is ____"
- "When I'm all alone, I pretend I'm a ____ because then I can do this ____."
- "I dream of doing this with my friends ____"
- "So that I can someday do something really great, right now, I practice this ____"
- One of the things I like most about this family is _____
- One thing I would like to hear more of in our family is _____
- One thing I would like to do more with my family when we are at home is _____.
- One thing I am proud of about myself is _____

4. Daily Visioning

Families can be instructed to begin their day by reciting a written statement of their family vision and constructing a list of activities for the day that are consistent with their vision. This can be combined with the creation of activity schedules, as described earlier.

The daily vision can state the family's position on how to face challenges (e.g., "Our family steps up to the plate when things get tough and we do our part to help others").

The combination of the day's activities constitutes a vaccination schedule aimed at

reducing toxic and unsafe behavior (Embry & Biglan, 2008).

5. Value Clarification Exercises

Identifying patterns of behavior that orient toward large, remote reinforcers often makes engaging in these behaviors themselves reinforcing. One simple activity that can be

repeated and modified each time it is used is the Life Timeline. Tape can be stretched out across the floor or carpet and photos or drawings of important life events laid chronologically on top of the timeline tape. Family members can then take turns talking about how these events impacted them, what they learned, and how they use what they learned then in their current circumstances (Flentroy et al., 2015).

Increasing Positive Reinforcement

1. Target and Reinforce Patience and Resilience

In general, behavior analysts teach replacement behaviors that are functionally equivalent to unwanted behaviors. However, some situations in which children engage in escape-maintained behavior cannot or should not be escaped. When ordered to stay at home, children must do so, even if the home environment is cramped and avoiding others is impossible. To address these situations, behavior analysts should teach tolerance to non-preferred activities/situations using graduated exposure and reinforcement (e.g., Cook et al., 2015; O'Rourke et al., 2019). Increasing rates of, lengthening durations of, or shortening delays to reinforcement improve the efficiency and effectiveness of graduated exposure to non-preferred activities/situations. Additionally, verbal augmentals such as, "superheroes model being patient for their sisters and brothers; I love seeing you show your brother how to be so patient" serve to increase the reinforcing effectiveness of others seeing a child behaving resiliently.

2. Make Use of Group Contingencies Among Siblings

The PAX Good Behavior Game (PAX GBG; Turkkan, 1988) is a set of practices that improve norms in the home environment. The school-based version of PAX GBG is being used in more than 50,000 classrooms across three nations and impacting more than

a million children and their families (<https://www.goodbehaviorgame.org/pax-science>). Empirical studies have shown behavioral and protective benefits in terms of problem behavior reduction (Embry, 2002), improved physical health (Krug et al., 1997), and emotional health (Jiang et al., 2018; Wilson et al., 2014). In the home environment, behavior analysts can ask families to map the things that they would like to see, hear, feel, and do more of and also less of in their home. The map of these four kinds of events can be colorful and pictorial if doing so will serve as a discrimination and self-regulation aid. The good behavior game follows and is used any time that the family engages in challenging activities, such as personal care routines or academic tasks. The family can be divided into teams and for the duration of the game, one parent announces how each team is doing. Parents can also be members of the teams in smaller families. For one minute at first, and subsequently longer intervals afterward, teams aim to remain focused and engaged in specified, desirable (“good”) behaviors. After each interval, teams that met the criterion celebrate with 10-s giggle fests, tickles, or other preferred activities. As with other practices in this section, the PAX Good Behavior Game can be mixed with other kernels to promote desired family norms (Jack et al., 2020). The classroom version can be easily adapted to fit family contexts (Embry & Biglan, 2008), and the general strategy has had systematic and direct replications in the United States, Canada, Europe and Australia presently (e.g., Kellam & Anthony, 1998; Kellam et al., 2014).

3. Incorporate Games to Provide Opportunities for Frequent Reinforcement

a. Math Mountain

Homeschooling and keeping up with academics can be challenging to parents that have never tutored their children before. Turning academics into games adds play and

adventure to tasks that might otherwise be difficult to engage children in. In Math Mountain, a rock cliff is climbed in several “pitches” or rope lengths. Each player leads a pitch by solving a math problem that is adjusted to their individual math skill level. When each player has solved a problem, the team arrives at the top of the mountain and must now rappel down the other side by each person solving another problem. Teammates earn bonuses for helping each other without solving the problems for each other. Parents can include metaphors to transform the functions of the aversive properties of math, for example, teammates may be encouraged to “climb past Frustration Yeti” or may use metaphors to reconnect with family values (e.g., “We are all tied together on the same rope in this climb. In this family, no one gets left behind. And if you fall off the cliff by getting a problem wrong, I promise I’ll use our climbing rope to catch you and you will be safe to climb back up”).

b. *Computer Cleanup*

Computers need to be cleaned periodically to ensure optimal performance. So do family rooms, dining rooms, and kitchens. Computer Cleanup makes use of the Premack Principle (Premack, 1959) in a concurrent chains preparation to promote delayed gratification.

- Clean for 5 min, earn 10 min of computer time
- Clean for 10 min, earn 25 min of computer time
- Clean for 15 min, earn 40 min of computer time.

Participants can select which of the above three schedules they will try. In each of the schedules, the following rules apply:

1. Put things away where they belong

2. Use cleaning products safely
3. Talk while you work as long as you keep working
4. If you stop working for a minute, it's cool, just add a min to the work time
5. If you finish early and help someone else, you earn bonus minutes of computer time

Antecedent Strategies

1. Non-Contingent Attention and Displays of Interest

Antecedent strategies are simple and useful to decrease the chance of problem behavior occurring at the level of the individual and also for groups of individuals (e.g., McDougale et al., 2019). Parents can be taught to utilize timers to deliver non-contingent attention and interest in the form of asking questions or making comments about an activity the child is engaged in, or providing statements of empathic support on a manageable, periodic time-based schedules.

2. Designated Activity Spaces/Rooms

It may be helpful for some learners who have difficulty transitioning from one activity to the next to be provided with visual cues, such as pictures, indicating the next activity on an activity schedule and to match that visual cue to one placed where that activity is to take place (Schmit et al., 2000). Designating areas or rooms within the home for specific activities (e.g., meditation, work, art, etc.) may help to promote stimulus control and increase compliance and on-task behavior. The family and children may come up with fun names for the designated spaces and correspond them to the activity schedule. Rotating among different spaces within the home may also help to alleviate environmental satiation through dishabituation. Similarly, to help with potential sleep

problems, children should not be allowed to do schoolwork or watch television in bed.

Instead, a nighttime routine can be established which involves activities such as bathing, brushing teeth, being read to, etc. to help evoke compliance and elicit sleep (Marquenie et al., 2011).

3. Present Moment Exercises

There are simply too many stimuli competing for our attention during the COVID-19 crisis. Both overt stimuli (e.g., social media, television news) and covert verbal stimuli (e.g., thoughts and worries about what the future may bring) can distract much-needed attention away from effective parenting-child interaction strategies. Paying attention to present moment stimuli is a behavioral skill repertoire that can be strengthened and generalized through practice and reinforcement across multiple tasks, settings, times of day, and sensory modalities (Little, Tarbox, & Alzaabi, 2020).

a) *Pet Your Pet*

Family pets are stimuli that can bring the behavior of paying attention under the control of the present context. Human behavior that is otherwise easily distracted by worries about the past and the future can be refocused on the present moment by asking family members to pet and find the softest part of their animal. This is often a preferred activity for pets and children alike (Feuerbacher & Wynne, 2015). Try taking a few deep, slow breaths while petting the pet and really focus on the tactile experiences of the warmth and texture of the fur. Try connecting that experience to other more difficult aspects of your life (e.g., “If I can be this in-the-moment right now, maybe I can really be present while struggling with home-schooling my child”).

- b) ***Five-Min Daily Meditation.*** Useful for the whole family, meditation can be done lying down, walking, jogging in place, and even while doing household chores. Incorporate “doing one thing and one thing only” into each family member’s activity schedule to improve focus and reduce defective stimulus control (Lunsky et al., 2017). Daily meditation has been shown to improve challenging behaviors in individuals with developmental disabilities, both through direct training and via parent training (Singh, & Hwang, 2020). As with other new behaviors, it is important to use graduated exposure. A 1-min meditation may be the best place to start. Also, you can increase the value of this activity by teaching parents to let everyone know that even superheroes need to recharge their batteries, and this is how they do it. Parents can model doing one thing, and one thing only, by putting away their phones for fixed and specified periods of time, for example, while helping their child with a particular task.
- c) ***5-4-3-2-1.*** It is easy to become overly focused on the past or the future. 5-4-3-2-1 encourages learners to bring their attention back to the present moment. Participants are asked to stand in place and describe five things they see, four things they hear, three things they can touch, two things they smell, and one thing they taste. Participants can be instructed to help each other with physical prompts or vocal probes. Parents can engage in this practice too, overtly with their children if it’s fun, or covertly whenever they notice they are paying more attention to their private events than to what is happening here and now with their family.

Discussion

Limitations

Addressing each client and family in terms of the unique history and function of individual behaviors is a hallmark of the discipline of applied behavior analysis. Therefore, the strategies listed here cannot and should not be considered a panacea for all families and all of the unique challenges they face during this trying time. Although we believe the list of evidence-based strategies described here will be a useful addition to practitioners' toolkits, it is each behavior analyst's ethical responsibility to select individual strategies based on their assessed fit for individual families, in terms of behavioral function, family and systems resources, and cultural backgrounds, among other variables.

Conclusion

The current situation may prove to be a teachable moment for the nation. There are about 34 million families with children in the United States and many millions beyond the U.S. These families are going to be spending far more time together than they typically have. Heretofore, the primary way in which families have been helped was via in-home and classroom or clinic meetings with individuals and small groups. The current crisis has created an unprecedented demand for parent support, but it has also forced us to curtail in-person services and instead, interact via phone and internet media. With simple exercises based on known principles, strategies, and kernels, behavior analysts connecting with parents online may be able to promote positive parenting to an extent that has never happened before. We have focused on ways to promote prosocial conduct in the home by pointing out that these actions are reflections of superpowers possessed by children. But it is equally true that parents, navigating an unprecedented situation with no lead time, are the unsung heroes of this era. The most important superpower of all is that with all the stress of this moment, a parent continues to get up in the morning and be... a parent.

Research Ethics

This article does not contain research conducted with human subjects.

Conflicts of Interest

The authors declare no conflicts of interest.

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