

# Perspectives of Infant Active Play: A Qualitative Comparison of Working Versus Stay-at-home Parents

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## Research article

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# Abstract

**Background:** Parents play a key role in infants' development through their interactions and the type of environment they provide for their child to promote active play. The amount of time parents are able to spend with their infant is dependent on their working status, yet few studies have explored parents' perceptions of their infants' active play by parental working status. The purpose of this study was to explore parents' perceptions of active play and compare responses between working and stay at home parents.

**Methods:** Twenty-nine parents participated in this qualitative study by completing a one-time, in-person semi-structured interview based on the Theory of Planned Behavior. Themes were developed and the proportion of working and stay at home parents who responded within each theme were used to compare for differences between working status using a directed content analysis approach.

**Results:** All parents believed active play could have a positive effect on their child's development through physical, social and emotional, cognitive, and/or language and communication development. However, stay at home parents reported a broader impact of active play across these domains; whereas working parents most often referenced active play as impacting infant's physical development. Social and emotional interactions were the highest reported form of active play among all parents. Additionally, all parents described similar barriers to increasing the time for active play. The most commonly reported barrier for all parents was time or schedule followed by care needs of the infant, environmental concerns, and need for restrictive devices (e.g., car seats). More stay at home parents than working parents reported the care needs of the infant as being a barrier. Recommendations for active play were not widely known amongst all parents, with a higher percentage of working parents reporting they would listen to a healthcare provider.

**Conclusions:** Working status of parents seems to have implications on certain aspects and perceptions of active play which in turn may influence infants' physical development. Future studies should objectively assess the impact of parents' working status on infant development and explore how gender of the parent may serve as a confounding variable.

## Background

The first year of life is critical to a child's physical development.<sup>1</sup> Infants' experience great change as they quickly transition through phases of holding up their head, rolling over, sitting, rocking, crawling, and eventually walking.<sup>2</sup> Parents undoubtedly play a key role in infants' development through their interactions and the type of environment they provide for their child.<sup>3,4</sup> However, the amount of time parents are able to spend with their infant during this development period is greatly influenced by their working status of being a working or stay-at-home parent.

Globally, several countries are seeing a rise in the percentage of working mothers.<sup>5-7</sup> Within the United States, the percentage of mothers who work either full time or part time has increased from 51–72% over the past 50 years.<sup>8</sup> Additionally, in two-parent households in the United States, 46% of both parents work full time.<sup>9</sup> Women who do return to work often return shortly after the birth of their new child.<sup>10</sup> For example, one study found on average women took 10 weeks of maternity leave.<sup>11</sup> While many countries offer paid leave for parents, the United States is one of the few that does not have a government-mandated leave policy.<sup>12</sup> As little as 13% of employees in the United States are offered paid parental leave and those that are offered leave receive an average of 4.1 weeks.<sup>13-15</sup> As such, parental leave varies greatly and is not only dependent on paid leave but other factors such as household income and job satisfaction.<sup>16</sup>

With more parents working, research has begun to examine how this may impact infants' development. Several studies have found a negative impact on children's outcomes when mothers returned to work within the first year of life.<sup>17-19</sup> For example, Sherlock and colleagues<sup>18</sup> found that infants (10 months, SD = .38) of mothers who returned to work within the first year of their child's life had an increased risk of motor and social impairment in comparison to infants' whose mothers did not return to work. However, other studies found that maternal employment did not impact infants' motor development.<sup>20</sup> Regardless of the impact of working status on an infants' motor development, parents still interact with their infants' and provide environments that can play a key role in their development.<sup>21-24</sup> In fact, a recent systematic review found four of seven studies found a positive impact of mother-infant interaction on motor development.<sup>22</sup> While working status was not a factor that influenced the mother-infant interaction outcomes, authors called for more research to elucidate how mother-infant interaction could influence motor development.

One pathway for parent interaction and motor development is through active play.<sup>25</sup> Increased opportunities for active play in infancy has been associated with improved adiposity, motor development, and cognitive development.<sup>26</sup> Active play, or physical activity, for infants can be defined as opportunities to be active several times a day in a variety of ways such as through interactive floor-based play.<sup>25</sup> Governmental organizations all over the world have begun to recognize the importance of active play and provided recommendations for parents and caregivers. In the United States, the American Academy of Pediatrics recommends that there is dedicated time every day for active play while limiting the amount of time spent in items that restrict movement such as car seats, strollers, and bouncy seats.<sup>27</sup> Other countries such as Australia's Department of Health have provided additional guidance including being physically active several times a day in a variety of ways including supervised interactive floor-based play with more activity better, 2) 30 minutes of tummy time for those not yet mobile; and 3) limit time in items that restrain movement for no more than one hour at a time.<sup>28</sup> Despite these guidelines and existing research on the influence of parental working status on infant development outcomes, few studies have explored parents' perceptions of their infants' active play and motor development and how this might differ by parental working status. Further most studies have focused primarily on maternal employment

influences and more recent studies including fathers are needed.<sup>16</sup> Therefore, the purpose of this study was to explore parents' perceptions of active play and compare responses between working and stay at home parents.

## Methods

Parents were recruited to participate in a larger study assessing parent and infant play interactions. Additional details regarding the full methodology of this study can be found elsewhere.<sup>4</sup> Specific to this qualitative content analysis, semi-structured in-person interviews were conducted with all participants in the Fall of 2018 thru Spring of 2019. This study was approved by a University Affiliated Institutional Review Board.

## Participant recruitment and selection

Purposive and snowball sampling were utilized to recruit study participants. Recruitment took place via flyers at maternal/child friendly businesses, sharing study information on maternal support *Facebook* groups and word of mouth. If interested in participating, parents were directed to an eligibility survey online through Qualtrics survey software<sup>29</sup>. If eligible based on parental age (> 19 years), age of infant ( $\geq$  6 months), and ability of infant to sit independently (defined as being able to sit without assistance for at least 10 seconds) meeting times to collect data were scheduled in the comfort of the participant's home. A total of 38 individuals completed the eligibility survey. Of these 38, 32 met eligibility criteria however 3 were unavailable when research personnel followed up to schedule an appointment. A total of 29 parent/infant dyads were included in the study.

## Instruments

A semi-structured interview guide was developed by two trained female qualitative researchers employed in academia (MS & PhD). A total of thirty-one semi-structured questions, consisting of both open and closed questions were developed based on constructs of the Theory of Planned Behavior. The TPB provides a model to better understand the connection between beliefs and behavior.<sup>30</sup> Specifically the guide focused on the constructs of attitude, a person's favorable or unfavorable perceptions of a behavior; perceived behavioral control, a person's belief in their ability to take part in the behaviors; and subjective norms, a person's belief on other peoples' thoughts on the behavior. Table 1 provides example questions of each construct. The interview guide was pilot tested with two parents and small wording changes were conducted after the pilot interviews were completed to enhance clarity.

Table 1

Example interview questions asked to parents based on theory of planned behavior model

Construct	Questions
Attitude	1. Tell me about the feeling or thoughts you associate with when you hear the term “active play.” 2. Tell me about your feelings or thoughts about your child’s current weight.
Perceived Behavioral Control	3. What recommendations for active play and sedentary time for infants have you heard previously? a. Who did you hear this from? b. Do you follow these guidelines? Why or why not? 4. What control do you think you have over your child’s weight?
Subjective Normatives	5. Who would be the person you would most listen to when it comes to your child’s active play? 6. Who or what would you turn for resources or advice regarding your child’s weight?

## Data Collection

Each data collection session consisted of two researchers visiting the parent/infant dyad in their home. Prior to participation the parent reviewed and signed a consent form which discussed the risks of participation. Parents were also asked if they had any questions prior to the data collection taking place and reminded that they could halt study participation at any time.

Upon parents’ written consent, parents completed a demographic survey that provided the following information about themselves: age, weight, height, household income, education and current employment. As a part of the larger study, infants and parents completed a variety of motor development and play measures described elsewhere.<sup>4</sup> After the survey and other assessments were completed the interview was conducted. All interviews were conducted by KS and audio-recorded and lasted approximately 20 minutes. Each parent completed one interview and no repeat interviews were carried out.

## Data Analysis

Interviews were transcribed verbatim into a Word document and uploaded using NVivo 12, a qualitative software.<sup>31</sup> For the purpose of this analysis parents were categorized as either “working” if they were not with the child during typical care hours of 8 – 5 pm or “stay-at-home” if they were the primary caretaker during these hours.<sup>32</sup>

A directed content analysis approach was used to develop the coding scheme.<sup>33</sup> Therefore, the coding scheme was developed deductively by two professional students (JR, KM) being trained in qualitative methodology under the direction of two PhD trained qualitative researchers (DD, KS). First, the two

students individually read all the interview transcripts multiple times to identify trends and themes in order to develop parent codes. Next, an inductive strategy was used to create child codes underneath the respective parent codes. The codes that were developed for the perceived impact of and engagement in active play aligned with the Center for Disease Control and Prevention's (CDC) developmental milestones for infants 6–9 months, which include general areas of cognitive, physical, social and emotional, and language and communication development.<sup>34</sup> A codebook was developed to provide an outline of the coding scheme and definition of codes.

Throughout the coding process a combination of peer debriefing and thick description was used to ensure data validation.<sup>35–38</sup> The two students separately reviewed and coded 9 of the 29 interviews, selected at random. The coding of the first 9 interviews were then compared for discrepancies by all authors. Consensus was reached through open discussion between all authors. The two students then coded an additional 10 interviews and a similar process was used to come to a consensus on all coding. Finally, the remaining 10 interviews were then coded. A total of four meetings between all authors took place before coding was considered complete. After coding was complete, differences were compared between working and stay at home parents based on percentage responses to each code. All four authors met a final time to review the similarities and differences between the two groups.

## Results

The demographics of the participants can be found in Table 2. Of the 29 parents, 16 were considered to be a stay at home parent whereas 13 were considered to be a working parent. The majority of the parents who participated in the interviews were females (89.7%).

<b>Table 2</b> Parent Socio-demographic Information		
Characteristics	Stay at home n=16 (n/%)	Working n=13 (n/%)
Parent's Gender		
Male	0 (0.0)	3 (45.5)
Female	16 (100.0)	10 (54.5)
Infant's Gender		
Male	6 (37.5)	8 (61.5)
Female	10 (62.5)	5 (38.5)
Parent's Age (n, %)		
Age (years)	31.63±4.87	30.46±4.75
Parent's Education (n, %)		
High school degree or less	1(6.3)	2 (15.4)
Some college	4 (25.0)	1 (7.7)
Bachelor's degree	6 (37.5)	4 (30.8)
Master's degree	4 (25.0)	3 (23.1)
Doctorate	1 (6.3)	3 (23.1)
Annual Income, USD (n, %)		
Less than \$60,000 per year	4 (25.0)	1 (7.7)
\$61,000-\$100,000	4 (25.0)	4 (30.8)
\$101,000 per year and above	8 (50.0)	8 (61.5)
Parent's Ethnicity (n, %)		
African American	0 (0.0)	1 (0.0)
White	16 (100.0)	12 (100.0)
Parent's BMI (n, %)		
BMI	26.70±4.98	27.06±7.38

Table 3 provides an overview of the themes broken down by the proportion of working and stay at home parents who responded within each theme.

<b>Table 3. Overview of Results</b>				
<b>Theme</b>	<b>All parents</b>	<b>Stay at home parents</b>	<b>Working parents</b>	<b>Sample quote</b>
<b>Perception of active play</b>				
Interaction with others	62.07%	68.75%	53.85%	"...interacting with your child while they are playing, so um not having them play independently as much so like rolling the ball back and forth or showing them how things open and shut."
Individual play	37.93%	31.25%	46.15%	"...any time there's kind of like a purpose, you can tell he is going after a toy or playing with a toy for an increased or set amount of time."
<b>Perceived impact of active play</b>				
Physical	72.41%	75%	69.23%	"...encouraging him to you know stand up by helping him a little bit or uh you know crawl by putting a foot out in front of him that's kind of motivating him to get moving..."
Social and Emotional	65.52%	75%	53.85%	"...I think it gives them better social skills."
Cognitive	62.07%	75%	46.15%	"I think it promotes curiosity, independence, obviously brain development, it gets them kind of working on the why and how of things."
Language/Comm.	31.03%	37.5%	23.08%	"...how to talk, interact, and you know recognizing voices, you can't just sit there you know talking straight to them..."
<b>Engagement in active play</b>				
Physical	68.97%	75%	61.54%	"With her, we try to practice her crawling and walking. Tummy time and rolling over."
Social and Emotional	86.21%	87.5%	84.62%	"Yeah just being more interactive. As opposed to just sitting him down and walking away. Just actually sitting down interacting with him and giving him full attention."
Cognitive	62.07%	62.5%	61.54%	"...showing her things, and encouraging her to use things, like hitting the drum, or like showing her what toys are supposed to do. Like you make a ball bounce and you make a car go."
Language/Comm.	44.83%	50%	38.46%	"...engaging, talking to her, making eye contact. Sometimes she is great about eye contact and then there is other times she is not but I think getting actively going back and forth."
<b>Barriers to active play</b>				

Time or schedule	44.44%	46.67%	41.67%	"The only barrier is just kind of time. Because he has his own schedule."
Infant care needs	29.63%	40%	16.67%	"...wants to eat you know, is ready for a nap and what not. He is an early bed person."
Environment	29.63%	33.33%	25%	"...environment, there's other kids, there's animals, it's dirty..."
Restrictive devices	11.11%	6.67%	16.67%	"...it's easier just to put her in the carrier and put her on my back and um and just kind of keep her hang out with me while they're doing their play."
Childcare	3.7%	0%	8.33%	"Daycare is a barrier. Um only he is in-home and even with a center the expectations they kind of try to keep them safe rather than on track at this age."
None	18.52%	20%	16.67%	"Not at this time."
<b>Recommendations for active play</b>				
Heard of	55.17%	50%	61.54%	Questions were closed ended therefore participant responses were coded as yes or no.
Have not heard of	44.83%	50%	38.46%	
Doctor mentioned	31.03%	25%	61.54%	
Doctor did not mention	68.97%	75%	38.46%	

## Perceptions of active play

When parents were asked their thoughts and feelings about active play, they described active play as either interactions with others (62.1%) or individual play (37.9%). If a parent mentioned interaction with others, they often described active play using words such as showing, engaging, bonding, or learning. Parents who described active play as individual play often defined active play as their infant interacting with toys and/or their environment without explicitly stating if the infant was interacting or playing with someone. Of the stay at home parents, 68.8% viewed active play as the infant's interaction with others; whereas, 31.3% viewed active play as individual play. For instance, a stay at home parent described active play as "...interacting with your child while they are playing, so not having them play independently as much so like rolling the ball back and forth or showing them how things open and shut." Among working parents, thoughts and feelings of active play was more evenly split between those who stated interaction with others (53.8%) and those who stated active play as individual play (46.2%). For example, a working parent stated active play as "...any time there's kind of like a purpose, you can tell he is going after a toy or playing with a toy for an increased or set amount of time."

## Perceived impact of active play

Overall parents viewed active play as primarily having an impact on physical (72.4%); social and emotional (65.5%); and cognitive (62.1%) development. Few parents, regardless of working status, referenced an impact on language and communication development (31.0% of all parents; 37.5% of stay at home; 23.1% of working). However, differences in responses between stay at home and working parents were found between physical, social and emotional, and cognitive development. Stay at home parents reported a broader impact of active play with a majority describing an impact on their child's physical (75.0%), social and emotional (75.0%), and cognitive (75.0%) development. For example, a stay at home parent (boy infant) explained: "Just because when they are really young learning different things, how to grasp, how to hold, how to talk, interact, and you know recognizing voices, you can't just sit there you know talking straight to them but you are moving stuff around to which helps them follow sounds, move their heads." Working parents mostly viewed active play as impacting infant's physical (69.2%) development, more than social and emotional (53.8%) or cognitive (46.2%) development. One working parent (boy infant) stated: "Well I feel like if we are encouraging him to you know stand up by helping him a little bit or uh you know crawl by putting a foot out in front of him that's kind of motivating him to get moving and we'll help his development faster than you know if we weren't doing that."

## Engagement in active play

When asked about the form of play parents engaged in with their infants, their responses were similar regardless of working status. Overall, 86.2% of parents reported mostly engaging in social or emotional play. One working parent (boy infant) referenced social and emotional play by stating: "Just being more interactive. As opposed to just sitting him down and walking away. Just actually sitting down interacting with him and giving him full attention." Additionally, 69.0% of parents mentioned physical play, 62.1% mentioned cognitive play, and 44.8% mentioned play that involved language and communication. A stay at home parent (boy infant) mentioned all forms of play in her response by stating: "Yeah I mean so we do the standing with arms held, um facial expressions, um just like showing him how things work. What they are, like I said physically moving around with him. Or dancing, singing, doing all that too."

## Barriers to active play

All parents described similar barriers to increasing the time for active play. The most commonly reported barrier for all parents was time or schedule (44.4%), followed by care needs of the infant (29.6%), environmental concerns (29.6%), and restrictive devices (11.1%). A stay at home parent (girl infant) made reference to time or schedule by stating: "I think having another child, makes it more difficult. It depends on what we have going on that day, you know how much time we are going to have at home." Parents who reported care needs mentioned things such as feeding, changing diapers, or the infant's mood. Environmental concerns included factors such as safety, cleanliness, "baby proofing" their surroundings, or weather. For example, one working parent (boy infant) said: "I would like to increase probably some more like outside play but my barriers there would be weather and just also some of the like safety around our house."

The most notable difference between stay at home parents and working parents was that stay at home parents (40.0%) were more likely to report the care needs of the infant as being a barrier more than working parents (16.7%). For example, a stay at home parent (girl infant) mentioned care needs as a barrier by stating: "...it depends on her mood sometimes, sometimes infants don't have it. There are going to be days when they are not going to be up for much." Additionally, among all parents, 18.5% reported having no barriers to increasing active play time with hardly any difference in the rate when comparing stay at home and working parents.

### **Parental Influence on Active Play**

Parents were asked who they believe has an influence on their infant's active play. All of the stay at home parents reported themselves as having influence on their child's activity whereas a slightly lower percentage of working parents (83.3%) mentioned themselves as having influence on their child's activity. Among the working parents, 33.3% of them reported the childcare provider as having an influence on their infants' active play. Additional reported influencers of infant active play included other family members (25.9%), such as siblings or grandparents.

### **Recommendations for active play**

Parents were asked if they had heard of recommendations for active play and/or sedentary time, half of parents regardless of working status reported that they had not specifically heard of recommendations for active play (55.2%). Of those parents who stated they had heard of active play recommendations (44.8%), almost all of them made reference to tummy time. No parents mentioned infant interaction when discussing the recommendations they had heard on active play. When parents were read recommendations on active play and asked about the achievability of these recommendations, 89.7% viewed the American Academy of Pediatrics guidelines as achievable and 92.3% viewed the Australia's Department of Health guidelines as achievable.

When asked whether their doctor had mentioned active play, a majority of parents (69.0%) reported they had not mentioned or discussed active play. But when the parents were asked who they would listen to about infant active play, a majority of parents (69.0%) reported they would listen to a healthcare provider. However, a higher percentage of working parents (84.6%) stated they would prefer talking about active play with a healthcare provider compared to stay at home parents (56.2%). One working parent (girl infant) stated this in regard to her family's doctor: "I know when they give recommendations it's not just because they are spouting it out they are always making sure to say this is why we do what we do, this is why we recommend what we recommend." Stay at home parents were also interested in listening to internet or book sources (31.3%), family or friends (25.0%), and guidelines (12.5%). For example, one stay at home parent (girl infant) stated: "The internet probably. I think that would be my go to because you get a variety of ideas there."

## **Discussion**

The purpose of this study was to explore parents' perceptions of active play and compare responses between working and stay at home parents. Findings from this qualitative study found that regardless of working status, all parents believed active play had a positive effect on their child's development in a variety of developmental domains including physical; social and emotional; cognitive; or language and communication. Interestingly, parents reported typically engaging in active play with their child mainly through social and emotional interactions. Finally, only half of parents, regardless of employment type, had heard of any type of activity recommendations from a healthcare provider with the predominant discussion focusing on tummy time.

Importantly, parents described active play as either interaction with others or individual play. Slightly more stay at home parents referred to active play as interaction with others compared to working parents. This is important as mother-infant interaction has been found to positively impact motor development.<sup>22</sup> Regardless of parent working status, there were parents who did not appear to recognize the importance of interaction during active play. Thus, efforts are needed to educate parents on the importance of interacting with their infant and how this can positively impact infants' motor development.

Although many similarities were determined in parental perception a few key differences were seen based on employment status. Specifically, stay-at-home parents were more likely to see active play as impacting physical; social and emotional; and cognitive development compared to working parents who related active play primarily to physical development. Interestingly all parents primarily described social and emotional interaction as the form of active play they engaged in with their infant. Although this is undoubtedly an important part of infants' development, all parents may need more education on the importance of all developmental categories to optimally support children's growth and development.

The most common barriers for active play reported by parents were time/schedule, care needs of the infant, environmental concerns, and restrictive devices. Previous studies in other countries have also found time and environmental concerns (i.e., weather) to be a challenge in promoting physical activity with youth children.<sup>23</sup> Further, overuse of restrictive devices such as car seats and strollers has been linked to motor development impairment.<sup>24</sup> Stay-at-home parents were more likely to report care needs of the infant, such as diaper changes, eating or feeding, or infant's mood, as a barrier to engaging in active play. This may be due to the increased amount of time parents spent with infants during the day. This finding may indicate the need for resources to be developed that ensure strategies for overcoming barriers are included that are appropriate for all parents, regardless of working status.

Additionally, stay at home parents were more likely to identify themselves as the primary influence on their child's active play, Similar to other research, a smaller portion of parents also identified family as an influence on infants' physical activity.<sup>26</sup> These differences should be considered when developing future educational resources to support infant active play.

Importantly, half of parents were not aware of any recommendations for active play. This finding may also align with parents also not including interaction in their definitions of active play, However, the

majority of parents felt the American Academy of Pediatrics and Australia's Department of Health infant activity guidelines were attainable despite being unaware of them prior to the interview taking place. Conversely, Carson and colleagues (2014) examined parents' perceptions of meeting the Canadian Sedentary Behavior Guidelines for children 0–4 years. These parents were more aware of the guidelines and felt they were easy to understand but did not find them as feasible.<sup>39</sup> Further in our study, the majority of parents reported not discussing active play with their doctor. Research is needed to determine how parents' perceptions of these guidelines may change based on conversations with their child's healthcare provider.

Related to active play resources, working parents were more likely to report a desire to get information about active play from their healthcare provider while stay-at-home parents reported a variety of different resources such as the Internet, book, family, or friends. Working parents' reliance on healthcare providers for information coupled with the focus on tummy time in these discussions may be why working parents associate active play with physical development. As benefits extend far beyond just physical, healthcare providers could consider providing additional information about the benefits of active play beyond just the physical benefits.<sup>23,24</sup> Additionally, other dissemination avenues of active play recommendations should be explored. For example, primary care physicians have a limited amount of time to spend with patients to discuss infant development.<sup>40</sup> Interprofessional support could be considered by involving pediatric occupational therapists and physical therapists in resource development and dissemination. Often these individuals are consulted in a reactive manner when a development issue has already been identified.<sup>40</sup> Future research should consider avenues that involve healthcare providers from multiple disciplines to receive education on infant active play as well as to design resources to share with caregivers.

This study did come with limitations that should be identified. First our study was limited by having a predominantly white, middle class, female sample. In order to gain a better understanding of both mother and father perceptions of active play, recruitment efforts should focus on attaining father participants to explore potential differences between mothers and fathers. More research is needed exploring the influence of the gender of the parent.<sup>41</sup>

Overall, our study is one of few studies to explore parents' perceptions of active play among infants and the only study, to our knowledge, to compare parent perceptions based on working status. This is an area that is becoming increasingly important given the shift in the number of working mothers and stay-at-home fathers. Findings demonstrate differences in parental perception of active play based on working status. Future research should focus on objective measures to quantify if these differences influence infant development.

## Declarations

Ethics Approval and Consent to Participate: This study was approved by the University of Nebraska Medical Center Institutional Review Board. Signed consent was received from all participants prior to

participation in the study.

Consent for Publication: Not Applicable

Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing Interests: The authors declare that they have no competing interests.

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Authors' Contributions: KS recruited and completed all data interviews. JR & KM completed initial qualitative analysis under the mentorship of KS and DD. KS and DD validated qualitative findings. All authors were involved in the writing of the manuscript and all had read and approved the final manuscript.

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