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Discussions

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Interactive comment on "Beachgoers' ability to identify rip currents at a beach in situ" *by* Sebastian J. Pitman et al.

Anonymous Referee #1

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This study builds on previous work examining whether beachgoers are able to identify a rip current, and includes a new twist of asking beachgoers if they can spot a rip that is either in front of them or adjacent to them. The authors conclude that photographs are not necessarily a useful means for teaching beachgoers about rip currents and how to identify them in situ. While I believe that this is an important contribution to a growing body of literature on rip safety, I have some questions and concerns that need to be addressed before final publication:

* Is this phrase correct in the abstract: "only 34% were unable to translate this into a successful in situ rip identification,….". If I understand this correctly, "unable" should be "able".

* The photographs used in the survey are from above and at an angle to the beach.

This is very different from the photographs used in previous studies that were near perpendicular to the beach as if the beachgoer was standing along the back shore. How much of the lower accuracy in this study is associated with the orientation and perspective of the photograph versus ability to spot a rip? This builds on the perspective idea of Brannstrom et al. (2013) who noted that the NOAA rip current sign was designed with a perspective different from a beachgoer. This is noted in the discussion, but should be discussed further.

* Following from the above, the perspective of the photographs is different from those looking for the rip in situ, and each respondent would have had a different perspective of the rip based on their cross-shore and alongshore position. How would these differences affect the results? Can you provide some photographs of how the beach and surf would have appeared to the beachgoer taking the survey from the flagged area and from the area directly in front of the rip?

* Again following from the above, what was the spatial distribution of surveys on the beach relative to the in situ rip? Was there a difference in the ability of the beach user to spot the rip and/or identify a rip in the photograph based on their position on the beach? Essentially, were those sitting at or close to the rip able to spot the rip compared to those at a distance?

* The survey was only administered during times when wave breaking made the rip current visible by the breaking wave pattern. It would have been interesting to continue the questioning through the period when the rip was not active, albeit with a modified question, to determine if the "wrong" answers were consistent. This raises additional questions: * Were the breaking wave patterns and intensity consistent throughout the question period? If not, was there a difference in the ability of beachgoers to identify the rip based on wave and tidal conditions, and also based on their relative position? * Was the accuracy of the in situ questions worse at the start and end of the active rip period compared to at the peak? How did this vary by the distance of the respondent to the rip?

* What was the distribution of answers on the photographs and how is an "X" on the photograph identified as correct or incorrect- I would assume the center of the X, but that should be described in more detail. Also- how large were the photographs shown to the beachgoer?

* When a respondent was asked to identify the rip in situ, how were their answers determined to be correct or incorrect? For example, could they have been pointing in the right direction but for the wrong reason? Some anecdotal examples would be helpful in assessing the accuracy and validity of this question.

* What was the sampling strategy for beachgoers and what was the rejection rate? How and where were beachgoers selected over the 7 days and over the period that the rip was active?

* Were people told if their answers to the photograph question was correct or incorrect before being asked to identify the rip in situ? How would correcting their responses or not affect the ability of them to spot the rip? For example, if they were corrected about the location of the rip in the photograph, were they then using the photograph as an interpretive tool to find the rip in situ? If they were not corrected, it can't be argued that photographs are not useful since they were not used as an education device in the survey.

* There is insufficient evidence to suggest a video or immersive experience is better for educating beachgoers since it was not directly tested. This statement should be qualified as needing further testing and not as a direct outcome of this study. Essentially, I don't think there is enough evidence to "advocate" at this time.

* In addition to videos and immersive experiences, the authors should also consider whether there is a limit to education on spotting rips and whether other management strategies are more appropriate and impactful.

* I think that more could be made about the results of Figure 5, which points to the dis-

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connect between knowledge and behaviour. I am particularly surprised by the inability of those who "would not" swim beyond the flags to identify a rip. This is interesting and suggests a self-selection of beachgoers with limited knowledge to swim in the patrolled area, or was it just coincidence? If there was a difference in the number of people and respondents within the flagged area versus outside the flagged area, a Chi-square test would be useful to determine if the larger number is an indication of over- or under-representation by question.

In short, I think this is an interesting and important contribution, but there are a number of questions and concerns that need to be addressed in the manuscript. By number the concerns may appear major, but they should be easily discussed or qualified in the manuscript.

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