

Inspiring Bahamian divers to action against SCTLD: A pilot study applying the Values-Beliefs-Norms Theory to predict participation and design communications

Inspirando a los buzos de las Bahamas para actuar contra SCTLD: Un estudio piloto que aplica la teoría de valores, creencias y normas para predecir la participación y diseñar comunicaciones

Inspirer les plongeurs des Bahamas à agir contre le SCTLD: Une étude pilote à appliquer la théorie des valeurs, des croyances et des normes pour prédire la participation et concevoir des communications

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EXTENDED ABSTRACT

Stony Coral Tissue Loss Disease (SCTLD) is an increasing threat to many Caribbean coral ecosystems. The disease was discovered in The Bahamas in November of 2019. Subsequently, a National Task Force was created in the spring of 2020 to develop a response plan to this emerging threat. One focus of the task force was the development of communication tools focused on slowing and stopping the spread of the disease, as well as gaining support for crowd-sourcing reports of disease sightings. Increasing the number of people reporting on the disease will help with quicker response times to areas that can be rehabbed and treated. Similarly, communications could also help with making disinfection protocols for divers, as well as boaters, more common. To this end, a pilot study was conducted to help get better sense of what people knew about the disease, what actions they were currently taking, and what motivations they had towards contributing further.

To better understand divers' motivations regarding SCTLD, we utilized the Value-Belief-Norm (VBN) theory as a framework. The VBN Theory is a widely used psychological framework that is an extension of the Norm Activation model (Schwartz 1977). VBN theory highlights how pro-environmental behaviors, including conservation actions, are more likely to occur when a causal series of variables, specifically values, beliefs, and norms, is present (Stern 1999). Values are the criteria that people use to justify actions and evaluate others and events. Behavior is thus triggered when an individual comes to believe that their values are threatened, and that threat can be relieved by a certain action. Beliefs are tied to 1) a person's world views, 2) whether they are aware of the consequences of a certain threat, and 3) how they ascribe responsibility to dealing with it. Lastly, personal norms refer to that internalized sense of obligation to act in a certain way. Norms are activated when an individual believes that violating them would have adverse effects on their lives or the things they value. It has also been recognized that personal norms are influenced by social norms (Ghazali et al. 2019). That is, individuals are more likely to engage in certain behaviors when they believe their family members, relatives, friends, neighbors, and colleagues value those actions too.

We created a 19-question survey made available via Survey Monkey during the first two week of August 2020 and shared with the local dive shops, through our Reef Rescue Network partners and volunteers, and via our social media platforms. We measured divers' values, beliefs about SCLTD-related issues, norms for the intended activities, and behavior intention on 5-point scales. Questions in the survey focused on each of these 4 constructs, with statements relating specifically to SCTLD and related actions. Respondents were asked the extent to which they agreed with the statement or the extent of their interest in participation with the actions. A chi-squared test for independence was used to do some simple statistics looking at the relationship between the VBNs and the actions.

A total of 64-respondents completed the survey, most of whom were recreational divers. All have a general understanding of the disease and recognize that it is killing corals quickly. Most of what they've learned has been via social media. Less than 20% have had the opportunity to help identify and report the disease, although most are also disinfecting their gear after each trip. Of the remaining respondents, the majority are planning to do both of these actions. However, the data show that no more than 30% of respondents are currently doing either of the boat-specific actions (discharging ballast away from reefs and disinfecting bilge water). Those who aren't participating in these activities are also less likely to commit to doing them in future. Most respondents have strong values, beliefs, and personal norms surrounding corals and the disease, and these will also serve as strong motivators for them to engage in actions related to halting the spread of the disease, particularly disinfecting their gear or reporting sightings. Divers have strong values related to the disease as a threat; strong beliefs related to personal responsibility and their ability to have impact; and strong personal norms related to having an obligation to helping. On the other hand, social norms were not as high. There is some statistical significance between strength of VBNs and doing or committing to doing diving-specific actions. Additionally, those who gave neutral responses are most likely not to participate or commit to taking action in the future. There may be an opportunity to specifically target groups who sit at neutral. However, respondents were less likely to agree with norms that speak to social pressures and these norms also did not result in significant differences among responses related to actions. Yet, one consideration to acknowledge is that the responses related to social norms may actually reflect low knowledge about the disease within the general public. Lastly, dive shops already include threats to corals in their oral briefings, as well as encourage divers to "look, but don't touch". However, they don't tend to focus much on conservation and impacts.

Based on these findings, communication around SCTLD in The Bahamas should focus on the following. Content related to the disease should be promoted on various social media outlets. This is how most people in this target audience are receiving their information. Also consider sharing content more widely, like through news or radio, to tap more general audiences. Diver awareness is increasing because they spend a lot of time in the water noticing the changes. The same can't be said for most boaters or others who spend most of their time on land and don't necessarily see the impacts. Communicating more broadly will assist with this and will also help to get at those low commitments to social norms. Content should also focus on describing the impacts of the disease. As we know from VBN theory, people need to not only be aware of the threats but the consequences of allowing it to persist in order to be motivated towards action. Next, it's important to create general messaging that reinforces people's ability to have positive environmental impacts AND personal obligations to help. Content should also further emphasize that "look, but don't touch" mentality, but couple it with info on the high mortality rate and fast spread of the disease, to convey that there needs to be high level of concern from all us. And lastly, there should be an increased focus on messaging to boaters and how their actions are just as important.

There are also some implications for the wider response to SCTLD. These particular findings are specific for divers in The Bahamas. It's important to remember that cultural context matters and that communications are created through the cultural lenses of the creator. That being said, this does provide the opportunity to conduct similar studies with additional Bahamian stakeholders, as well as audiences in other locations impacted by the disease to provide a broader scope for motivations and to help craft targeted, audience-specific communications to further inspire action. Content should reinforce that impacts of the disease are far reaching, but there are actions individuals can take to contribute. It's also important to keep in mind the number of messages on each communication product and where those products are featured or posted to ensure that they are accomplishing the intended outcomes. And this speaks to the last implication – evaluation needs to be an important aspect of this work. This begins with ensuring the communications plan includes outcomes and associated metrics, as well as a strategy for assessing how well these tools are working and for how to iterate and improve them based on findings.

KEYWORDS: Stony Coral Tissue Loss Disease; Value-Belief-Norm Theory; Science Communication; The Bahamas; Stakeholder Surveys

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