Commercial Fishing Safety in the Gulf of Mexico and the Southwest Ag Center: The Decade in Review

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SUMMARY

The commercial fishing work sector continues to experience one of the highest occupational fatality rates in the United States. Human factors, machinery and equipment, and the environmental elements at sea contribute to the burden of fatal events. There appear to be regional differences in distribution of these events relative to fishery type, geography, and other variables such as cultural factors. Furthermore, less is known about non-fatal occupational morbidity, risk factors, and association with fatal events.

Culturally appropriate training and awareness measures combined with recognizing normative influences can favorably alter attitudes, beliefs, and behavioral intent related to workplace safety in this population of Vietnamese shrimp fishermen along the Gulf Coast.

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INTRODUCTION

From 2000-2009, 504 commercial fishing deaths occurred in the United States, 31% of which resulted from a person falling overboard and drowning (Lucas, Lincoln, Somervell, and Teske, 2012). Of the 504 commercial fishing deaths that occurred across the United States between 2000 and 2009, 116, or 23%, occurred in the Gulf of Mexico fishery (NIOSH, 2015). Similar to other countries, there is no requirement for U.S. commercial fishing crews to wear personal flotation devices (PFDs) while fishing (MAIB, 2016). Yet the leading cause of death among fishermen is drowning due to the loss of a vessel or a fall overboard. The majority of people that have died due to falls overboard were alone while on deck, and none of them had on a personal flotation device (PFD) (NIOSH, 2015). Vietnamese fishermen make up one-third of the licensed fishermen population working on the Gulf Coast. This study is part of a 3 phase NIOSH-funded study, with the long-term goal to develop and evaluate a social marketing campaign to increase PFD use. The purpose of this study is to determine which type of commercially available PFD results in the highest satisfaction and preferences among Vietnamese commercial fishing crews in the Gulf of Mexico. Attitudes/beliefs among Vietnamese shrimp fishermen of the Gulf of Mexico may influence behaviors that are risk factors for both fatal and nonfatal injuries.

METHODS AND MATERIALS

Project partners, USCG Safety Inspection Examiners, recruited subjects in three Louisiana fishing communities: 9 captains and 24 deckhands participated in this pre-post test repeated measures study. The captains and members of crews provided baseline data and were then asked to wear three different types of PFDs for a minimum of 3 hours while shrimp fishing in the Gulf. Once the crew returned to dockside, a follow-up survey was distributed. For each of the three types of PFDs: ski belt, inflatable belt, inflatable suspender, crew members were asked to evaluate 11 PFD attributes: weight, tightness, constricting motion, chaffing skin, bulkiness, snagging gear, comfort, how the PFD fit their body, interfering with work, donning and cleaning.

(cont.)

RESULTS

Fishermen averaged 22 years of commercial fishing experience, and worked roughly eight months out of the year. At baseline, only 12% indicated wearing a PFDs s frequently and none stated always. Yet 48% reported PFDs are effective if fall overboard. The PFD considered least constrictive of movement was the inflatable suspender (43.5%) compared to the inflatable belt (47.5%) and ski belt (28.3%). The inflatable suspender was rated to interfere the least with work compared to the other 2 types of PFDs. 54.2% ranked the suspender type as very comfortable to wear. When assessing the extent they would wear each type, 66.7 % reporting they would wear the inflatable suspender; 50% of the participants would wear the ski belt and 20.8 % would wear the inflatable belt most or all of the time. Respondents indicated they were willing to pay the most for the suspender type. Fishermen were most likely to wear PFDs if the captain told them to, working alone, working during bad weather, and working on or near the edge of the boat. Less than half of the respondents were influenced to wear any of the PFDs because other crew members wore PFDs.

Fig. 1. Didactic instruction

Fig. 2. . PFD aboard vessel on deck.

Presently, identifying barriers to use of lifesaving PFDs, preferences of commercial fishermen for various PFD designs, and development of a social media campaign to promote use on deck are underway with the following observations to date:

- Vietnamese commercial fishermen prefer inflatable suspender type PFDs over ski belt or inflatable belt PFDs when evaluating satisfaction among workers. Suspender type PFDs were found to be cooler, less bulky, and overall preferable.
- Social marketing messages have been developed targeting captains and deckhands. Messages focus on the Vietnamese allegiance to family as a strong motivator to avoid risk of drowning.
- Prototype social marketing messages were tested during summer 2016 and disseminated in the spring of 2017.

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DISCUSSION

Although the common barriers reported by fishermen to wearing PFDs are bulkiness and discomfort, some of the PFDs evaluated in this study received high scores for comfort and satisfaction. Given the availability of PFDs that are comfortable to wear while working, fishing vessel captains and owners should consider implementing policies mandating the use of PFDs while working on deck. The inflatable suspender PFD received high scores in terms of weight, comfort and fit. Other studies have found comfort to be one of the most important considerations for wearing various types of PFDs. Interventions to increase PFD use in the fishing industry should be tailored to focus on addressing the significant barriers to PFD use.

CONCLUSIONS

Culture plays a significant role in attitudes/beliefs among Vietnamese shrimp fishermen of the Gulf, and may influence behaviors that are risk factors for fatal and non-fatal injuries. In particular, commercial fishing industry leaders are able to influence behaviors and practices among fishermen.

The development of suitable and effective interventions requires consideration of cultural influences influencing behavioral change. Additionally, captains are considered key to safety culture on the vessels. When deckhands respect the captain, they are more likely to do the work taking cues from the captain on safe work practices.

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