Perceptions amongst Tasmanian recreational scuba divers of the value of a diving medical

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Abstract

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An online survey was offered to recreational divers in Tasmania to ascertain if they have an understanding of how pressure affects their health and if they considered an annual dive medical necessary. A total of 98 recreational divers completed the survey, five of these had never had a dive medical while 74 felt that if they passed their dive medical they do not have any potential illness. Sixty five saw the dive medical as a comprehensive health check. This project provided an insight to Tasmanian recreational divers' understanding of and attitude towards the value of a dive medical.

Key words
Fitness to dive, recreational diving, medicals – diving, survey – diving, computers

Introduction

Recreational diving sits in the collective of swimming/diving reported to the Australian Bureau of Statistics as one of the top five most popular sporting activities in Tasmania.[1] It is challenging to tease out exact participant numbers but there is a noted sustainment of both dive shops and dive schools in Tasmania giving rise to the assumption that recreational diving is holding its appeal. Based on PADI (Professional Association of Diving Instructors) statistics we can also conclude this popularity can be mainly attributed to men in the median demographic of 30 years. Tourism Tasmania lists four recreational dive training schools: two in the north and two in the south, with approximately 100–120 recreational scuba divers trained by each per year. Anecdotally half those qualifying remain in the sport for greater than five years. Reported dropout rates of recreational divers in Western Australian in 2008 suggest this retention rate is high in comparison.[2]

Before taking a recreational dive course in Tasmania, it is a legal requirement that the candidate undergoes a face-to-face medical examination (AS4005.1) as per Australian Standard AS4005.[3] Medical fitness is assessed by a medical practitioner with training in diving medicine.[4] The medical (AS4005.1) is not designed to be an all-encompassing health check. In recent years its purpose has changed from being the yardstick by which doctors 'police' recreational diving to one of basic health surveillance and advising a level of personal risk mitigation. Indeed, in a 2010 comparative review of personal survey and actual medical outcomes, the face-to-face interview did identify people at risk from diving, but also this component had value beyond making people unfit to dive in that it allows an opportunity for risk mitigation strategies to be offered and discussed.[5]

There are no legal requirements for divers to undergo an annual or any other interval medical; consequently most recreational divers have a medical at the beginning of their training and never repeat the process. In reviewing 40 diving-related deaths in New Zealand, it was considered that 12 were in divers who should probably have been disqualified from diving on medical grounds.[6] However, if recreational divers have no obligation to seek a medical it is reasonable to assume that some of these conditions would present in their day-to-day lives.

Method

A concise sample (network sampling) of recreational divers living in Tasmania was recruited for the project in November 2011. Adult, certified recreational divers attending clubs or club-organised dives were invited to complete an anonymous online survey. The questionnaire (available from the author) was advertised via dive group newsletters, online chat rooms and social face-to-face meetings. The researcher was invited to give a presentation of the questionnaire and the research goals at three individual clubs' meetings as well as via podcast and Skype.

The survey questionnaire examines both current perceptions of the participant's health and their attitude towards healthy practices. They were asked to provide some basic demographics and answer questions about their health, their perceptions of personal health and their general attitude to diver health. The online questionnaire took 20 mins to complete. A review of the literature and discussions with a diving medicine physician formed the basis for the original questionnaire design. The questionnaire was refined via a pilot study involving 20 participants and transferred from hardcopy to online on the pilot group's advice. The study was approved by the Human Research Ethics Committee (Tasmania) University of Tasmania, Network REF no: H11783.

Results

Within 5 weeks of starting the project, 98 (75.4%) responses of 130 distributed were received. The demographic data illustrated that the sample was representative of the targeted population. Seventy-one respondents were male, with 39 in the age range 18–28 years. All of those surveyed indicated that they had undertaken some formal dive training. Fifty-five divers had dived more than 15 times during the last year using open-circuit scuba. Twelve of these 55 also dived on hookah (unregulated surface supply via a single hose). A standard scuba second stage is often used as the delivery unit, but light, full-face masks are also used.

When asked about pre-existing medical conditions that may prevent them from diving, 22 of the 98 respondents answered 'no' while 63 skipped this question. The remainder gave answers ranging from high blood pressure (n = 2), ear injury (n = 1), asthma (n = 2), diabetes (n = 1), achalasia (n = 1) and obesity. A similar question was asked later in the survey and phrased slightly differently: "*Do you have a medical condition that you think may impact on your diving experience?*". Eleven replied yes and listed ear injury (n = 1), asthma (n = 1), narrow sinus (n = 1), disc L5/S1 pain (n = 1), old knee injury (n = 2), diabetes (n = 1) and achalasia (n = 1); these responses correlated with the earlier responses by the same respondents.

Only five had never had a diving medical, 19 had one before their dive course, 19 had one annually, 37 had had their medical more than two years previously and 18 skipped this question (Figure 1). These medicals were performed either by a diving doctor (56) or a general practitioner (42). These numbers include five respondents who had not had a dive medical; it is assumed they indicated a preference should they choose to have a medical. When asked why they did not undergo an annual dive medical, the predominant response was "*I don't feel that my health has changed since my last medical*" (n = 55). Twelve respondents said they were "*too lazy*" and 13 stated they "*could not afford one*". When asked "*If you have a diving medical do you consider this a comprehensive medical check?*", 65 answered yes, 33 said no, while two skipped the question. Respondents validated this by commenting that there were no blood tests (n = 6), no test for patent foreman ovale (n = 1), no tests for cancer (n = 4) and that the "*dive medical only checked dive-related stuff*". Several also commented that the medical was designed to check for 'fitness to dive' not be a thorough medical exam. The question "*If you passed your diving medical would you consider that this means you do not have any potential illness that could compromise your health?*" elicited 74 responses. There was no correlation with any particular age group.

When asked about diving illnesses, 80 respondents said that they "*knew quite a lot and would be able to render first aid to* [themselves] *or a buddy*" (Figure 2). Three stated that their health could not be compromised by conservative recreational diving. Asked if they had ever had any treatment for a diving-related illness, 78 said no and 20 listed a mixture of ear trouble and decompression illness, (DCI). When asked what might be an injury to make them contact a diving doctor, 73 stated DCI symptoms and the remainder said anything unusual or ear problems after a dive.

Figure 1
Recency of dive medical in years (time) reported by age (years)

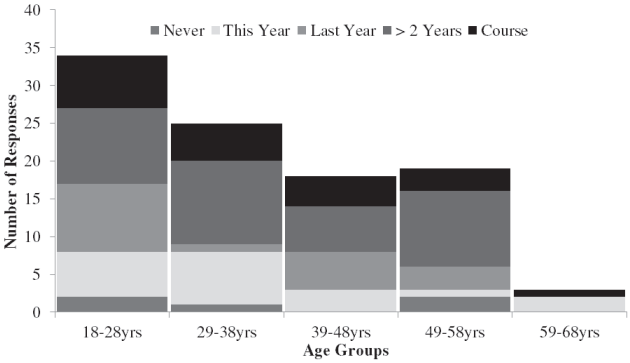
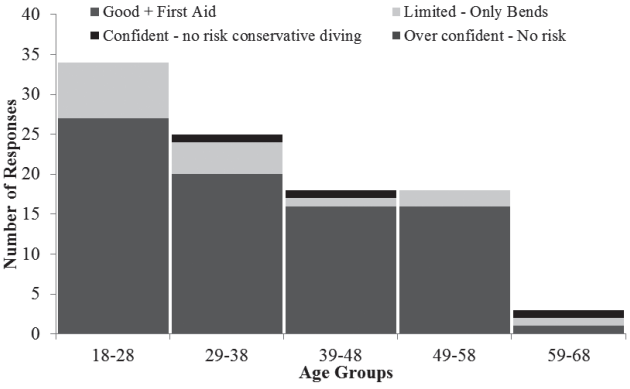


Figure 2
Self-assessed diving illness knowledge is demonstrated to be higher the younger the diver



When asked if dive medicals should be legislated, 37 said yes and 51 said no. When asked about the time since their last dive medical, there was a cluster of the 18–28-year group who had had a medical either that year (n = 9), the previous year (n = 6) or associated with a course (n = 7). This might be explained by the fact that a large group of university dive club members participated, of whom many would have come recently to the sport. Thirty-seven divers had had their medical over two years previously. This did not correlate with any particular age group, the financial cost (n = 13) or lack of time (n = 4). Most of the younger divers responded that they felt that "*their health had not changed since their last medical so why would they need another?*"

Discussion

This survey had a good response rate (75.4%). Many commentators have concerns with the validity of online surveys, specifically the lack of representation of all socio-

economic groups, attributed to variable access to computer facilities.[7] However. recreational divers are generally 'savvy' with electronic media. The newcomer to recreational diving is often over 18 years of age, financially independent and has a suite of electronic goods with which to access the web, GPS, social media such as *Facebook*, etc.

This project has several important limitations. This dataset was drawn entirely from Tasmania and unintentionally significantly biased to the south of the State. The survey was offered on-line only and there has been no follow up with the cohort to document any changes in opinion.

Despite this, three key themes emerged from the data:

- A dive medical is not a comprehensive health check; respondents felt both 'scans' and 'bloods' should be taken for this to be demonstrated. Several explained that no medical can predict illness, you only find what you are looking for and the dive medical is focused on health issues related to diving, so large collections of ailments associated with anything else are left unassessed or missed.
- The dive medical checks physical aspects of health known to be related to 'fitness to dive', so it can only be assumed you are fit to dive on that day and not completely disease free.
- The third theme is illustrated by the quote; "*Doctors don't know s**t!*" Examples were given of ways that doctors have 'missed' diseases that respondents, friends or family have gone on to develop and suffer from. These were conditions not directly associated with diving fitness, such as rectal cancer.

These themes sit well within the current medical philosophy that a recreational dive medical is an asset to health surveillance rather than a 'big stick' wielded by the physician. In the early 2000s, the move away from the medical practitioner carrying the burden of risk was a significant change in thinking that required some cerebral adjustment by many practitioners in this field.[8] The predominantly younger generation of recreational divers surveyed for this project are not aware of this medical history nor do they consider the former level of personal health surveillance necessary.

There is also no legislation to prevent recreational divers from diving on the basis of a medical performed when they were younger and fitter. In a report of diving-related deaths in Australian waters in 2008, it was recommended that older divers could reduce their risk by increased health screening.[10] This is supported by a review of the Australian Diver Emergency Service, in which the authors state that "*it has been difficult to persuade recreational divers of the importance of a medical review of fitness beyond their original dive medical*".[10] This situation is clearly echoed in the Tasmanian population, with only 19 of 98 recreational divers surveyed undergoing an annual medical.

Conclusions

This group of recreational divers have provided an insight into their psyche; it is not exclusively the cost or time taken to have a dive medical that they see as prohibitive but a consideration of its necessity. Comprehension of how one's health is affected by pressure may go some way to creating an understanding of why a medical might be of value. Further study to explore recreational divers' understanding and approach to medically managing their health and consequent fitness to dive would be useful.

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