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Young adults' perception of mandatory CPR training in Australian high schools: a qualitative investigation

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Research

Young adults' perception of mandatory CPR training in Australian high schools: a qualitative investigation

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Abstract

Introduction

Bystander cardiopulmonary resuscitation (CPR) can be performed by any member of the public who witnesses a cardiac arrest and has the knowledge, training and skills to perform it. Even though bystander CPR has been shown to greatly improve the victim's chance of survival, its training and performance rates are alarmingly low.

Methods

One potentially effective intervention to tackle this issue is to implement mandatory CPR training programs in high schools. We undertook in-depth qualitative interviews with 28 recent Australian high school graduates. The interviews were transcribed and then analysed, with participants' answers used to draw conclusions on the acceptability of mandatory CPR high school training.

Results

Results suggested those that had undertaken basic first aid training in high school would be more open and confident to perform bystander CPR. Among those who had not undertaken training, cost and access were identified as the key barriers. Regardless of whether participants had or had not previously undertaken training, they understood the importance of CPR for the treatment of cardiac arrest victims.

Conclusion

Among our sample, there was overwhelming support for the concept of mandatory CPR training being implemented in high schools. Should such a program be applied, there is the potential for this to have an impact on bystander CPR provision, and hence cardiac arrest survival rates, within the wider Australian community.

Keywords:

high school CPR; cardiopulmonary resuscitation; bystander intervention; CPR training uptake; qualitative interviews

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Introduction

Bystander cardiopulmonary resuscitation (CPR) is CPR performed by members of the public in an of out-of-hospital cardiac arrest. Research suggests that survival of victims of out-of-hospital cardiac arrest is greatly improved through the provision of bystander CPR, demonstrating the ability a layperson has to impact the survival rate of cardiac arrest victims (1). Typically, the frequency of bystander CPR provision is low; a Japanese study analysed a total of 4068 adult victims of out-of-hospital cardiac arrest which were witnessed by bystanders and noticed 72% of these victims did not receive bystander CPR (2). Furthermore, in the United States (US), Sasson et al (3) report only one-quarter of out-of-hospital cardiac arrest victims receive bystander CPR. Layperson resuscitation can serve as a bridge between cardiac arrest and the arrival of emergency medical services and has been suggested to triple survival rates of out-of-hospital cardiac arrests (4).

In order to improve bystander CPR commencement rates, barriers to CPR training and initiation uptake must be identified. Drager (5) suggests the complexity and cost of first aid training can contribute to a lack of uptake. Drager (5) also notes bystander panic and discomfort to be major contributing factors to CPR not being initiated during a witnessed cardiac arrest. Sorets and Marteen (6) suggest these issues can be alleviated by enhancing confidence through adequate training, an objective that could be greatly assisted through a mandatory CPR training program within secondary schools.

High school CPR training may be beneficial in laying the skill foundations and sense of social obligation to remaining skilled in its provision. Wang, Ma and Lu (7) argue that by exposing individuals to this form of training early, people will be more inclined to seek follow-up training and skill retention courses, as they have been educated about the importance of CPR training from a young age. A review of the literature has found the principle of CPR training in high schools has been applied internationally. This includes studies in the US (4,6), The Netherlands (8) and Norway (9), all of which have resulted in an overwhelmingly positive response from the students who had undertaken mandatory CPR training as a part of their high school education.

These aforementioned studies throughout Europe and the US have provided data suggesting mandatory implementation of CPR training in high schools is looked on favourably by students and can increase confidence to intervene in situations when the need arises. However, we were unable to locate any data pertaining to Australian perceptions of this concept. Obtaining data surrounding the perceptions of Australian youths toward mandatory high school CPR programs could provide a catalyst for implementing such programs locally. Should it be discovered that the younger Australian demographic are supportive of mandatory implementation of

CPR training in high school, this could provide the first-step toward influencing education policy makers across the country in a trend that has clearly been sparked internationally.

Methods

Study design

The study consisted of cross sectional data obtained via in-depth qualitative interviews. All interviews were de-identified, transcribed and then analysed based on recurrent themes found throughout participant responses.

Participants

The study consisted of young Australians aged 18–21 years who had graduated high school. Recent high school graduates were chosen as the target group for the research – as opposed to current high school students – due to difficulties surrounding ethical approval for research with those aged less than 18 years. Further, it was felt that recent graduates would be better equipped to reflect on their entire high school career, as opposed to current students who had not yet graduated.

Persons working or studying within a health care setting were deemed ineligible to take part in the study, as we felt such backgrounds may not provide a true representation of the 'average' high school graduate. It was felt those individuals with a work or study affiliation to health care would perhaps have a different inclination to the mandatory CPR in high school concept, compared to those with no health care affiliation, particularly as many health care services encourage their affiliates to undertake CPR training on a regular basis. Those who had undertaken some form of CPR training in the past but did not work or study in the health care discipline, remained eligible to participate in the study. To recruit participants, personal contacts of the study investigators were contacted via social media or email. A total of 28 in-depth interviews were conducted.

Ethics

The research received ethics approval from the School of Medical and Health Science and School of Science Ethics Subcommittee from Edith Cowan University (#16022).

Procedures

One-on-one, face-to-face interviews were undertaken in a quiet room at Edith Cowan University Joondalup campus. Before commencement of the interviews, participants were given a short information letter outlining the study, its aims, and how and why their answers would be used. Informed consent was gained through the participants signing a consent form before the interview proceeded. A semi-structured interview guide, outlining general themes to be touched on throughout the interview, was used to guide researchers and facilitate discussion. All interviews were audio-recorded on dicta-phone.

Data analysis

All interviews were de-identified and transcribed verbatim. Statements extracted from transcripts of the interview discussions were sorted into recurrent themes, using the method prescribed by Owen (10). Further, interviews were randomly split into two halves, containing 14 transcripts each. Two groups of two researchers independently undertook thematic analysis of each of their 14 prescribed interviews, meaning that each transcription underwent analysis by two separate researchers. Pairs independently analysing the same 14 interviews first met to corroborate findings, reaching consensus on interpretation of themes. Following this, a 4-hour meeting was held between all four researchers, identifying similarities and differences noted between their respective transcription sets. Overlapping of themes were mapped, before reaching final consensus of identification of themes. Benefits of multiple coding in the limiting of researcher bias in qualitative research has been discussed in previous publications (11,12).

Results

A total of 32 participants were approached to participate in an interview (19 women and 13 men). Of these, four declined to participate (four men). Nineteen women and nine men completed an interview, with the mean age of participants of the study being 20 years (SD=1.1). Eighteen high schools were represented by at least one participant (11 public schools, seven private schools). See Table 1.

Table 1. Demographic breakdown of participants by gender and public versus private school

	Men	Women
Public	3	12
Private	6	7

While the core focus of interviews was participants' opinions towards the introduction of mandatory CPR training in high schools, a number of related concepts were also discussed. These included barriers to CPR delivery and training, feeling comfortable performing CPR, opinions on CPR and its importance, and opinions on the introduction of mandatory CPR training in high school. Just over half the study sample (17 of 28) had some training in CPR, of which each had completed their training voluntarily through training organised as part of their secondary schooling.

Barriers to CPR: delivery and training

Throughout the course of the interviews, several barriers to both learning and performing CPR were discussed. The overwhelmingly predominant deterring factor participants cited for not being comfortable with performing CPR was feeling they didn't have the skills and knowledge to correctly perform the technique, which may result in further harm to the

victim. It seemed that while the 'willingness' to intervene was largely present, doing so without the proper training increased discomfort. This belief was more prevalent among those identifying they had not before undertaken CPR training. Some quotes demonstrating these concerns are listed in Table 2.

Table 2. Quotes by participants on concerns surrounding CPR provision

'I really would be worried about hurting them further and also just putting them at risk more than what they already are.'
'That would be my biggest fear towards like, actually doing the CPR. Would be that I was to do it wrong and hurt them more or put their lives in danger.'
'Just probably not having ever had to have done it before, never having to actually respond in a situation like that, that would be the main thing.'
'A lot of people don't have the knowledge to actually do anything. As well as the fear of doing something wrong and stuffing up and being the reason for someone's death.'

The most heavily cited factor that participants attributed to not undertaking CPR training, or not having maintained their skills since first voluntarily undertaking training in high school, was cost (eg. 'I haven't been able to bring [themselves] to pay for something like that' and 'If it was free, especially like at university, I'd definitely make the effort'). A small number of participants also expressed concern towards being held legally liable for their actions (eg. 'if I did anything incorrectly I wouldn't want to be liable for any damages done to that person'). However, of the participants who did mention the issue of liability for rendering care, the majority pronounced that this would likely not stop them from intervening if their actions had the potential to save someone's life. Nonetheless, it was a concern that weighed heavily on their minds.

Communicable diseases were also mentioned as a deterring factor lessening the likelihood participants would be willing to provide CPR. However once again, participants stated that although it was of concern, the majority suggested this factor would not be enough to stop them from rendering the care. In regards to delivering rescue breaths, one participant stated 'If they looked super ill, you'd be hesitant. But probably the greater good would take over and you'd be like "I should probably still do that".' Other participants were aware of compression-only CPR and stated they would avoid this issue by simply not giving the breaths if attending to a stranger. Three other barriers were mentioned by a minority of participants (three separate interviewees only mentioned one barrier each, which were not corroborated with any other interview responses): an uncomfortableness with the cracking of ribs, if the patient had an underlying medical condition or medical alert bracelet, and if the victim requiring treatment was a paediatric or elderly person.

Feeling comfortable performing CPR

Throughout the majority of interviews, a clear link was noted between level of training and participants' confidence in performing CPR. When asked how they would feel about performing CPR, participants who had previously undertaken training stated 'I wouldn't be comfortable but it would be a situation that you would have to deal with. You'd get passed your 'uncomfortableness' and do the damned thing' and 'I would most likely be apprehensive but if there was no one else around I would definitely help out where I could'. When participants who undertook training in high school were asked to comment on the extent they felt they recalled the training, most suggested that while some of the specifics may have been lost to memory, the most important and pertinent skills essential to rendering effective care remained (eg. 'Yeah, I think definitely. Like, the knowledge is still there, and like I said at the beginning if I was pushed to actually remember it all I probably could do it with fairly certain knowledge. But yeah, I guess again, because it was so long ago, I don't feel super confident that I'd know everything. In saying that, I also don't feel like I'd be unable to'). Only one participant with previous training stated they would still be unwilling to perform it if they came across a situation requiring it, stating 'I just don't think I could if I'm honest – I would be too scared or worried'.

Conversely, those participants who had no previous CPR training did not feel confident to deliver the skill. They stated that they didn't have the knowledge to perform the skill but felt if they had undertaken some form of training, they would be far more likely to act (eg. 'If I was confident in my abilities, then I definitely would' and 'If I knew what I was doing then yeah, I would certainly do what I could to help').

Opinions on CPR and its importance

Participants acknowledged the importance of CPR and its training regardless of background, experience, training or even willingness to perform it themselves. All interviewees suggested CPR is an extremely important skill that people should possess. This is demonstrated through some interview excerpts, including: 'It's definitely something I feel you should be aware of because you can't rely on other people in certain situations to do the right thing' and 'It was really good to know, it's important to have those kinds of skills'.

Furthermore, participants demonstrated some knowledge of the importance of bystander CPR provision in patient health outcomes (see Table 3). There were no interviewees who weren't aware of what CPR is or its purpose. Further, there were no participants who felt that CPR was unimportant or irrelevant.

Opinions on the introduction of mandatory CPR training in high school

The overwhelming response from participants when discussing the topic of mandatory CPR training in high schools was a

resounding 'yes', with participants asking 'Why isn't it already compulsory?' and stating 'We learn stuff like history, economics geography and art, although those things are important, is anything as important as saving someone's life? No. So I think it's a really valid idea'. Participants who did receive the training in high school similarly wondered why training wasn't offered across all secondary education. Those who didn't receive any training made clear they wished they had been offered it during their education.

Table 3. Participant quotes on CPR skill importance

'There should always be at least one person with the skills in a situation where it's needed. Everyone, ideally!'
'CPR is important, and can save a life, or at least help until ambulances or somebody else helps, that kind of thing.'
'If you are in public and you can see the signs or think "that person doesn't look right" and they collapse in front of you then you know what to do instead of panicking and then waiting nearly half an hour or 20 minutes for an ambulance to come, when in that 20 minutes you could be doing some good to them. By the time that ambulance comes they could be dead.'

Table 4 depicts further participant responses to being asked if they felt CPR training should be made mandatory in high school.

Table 4. Participant quotes on mandatory CPR training in high schools

'Yeah no I definitely think there should be a program. But I think it should be compulsory, because the one we had wasn't, so some people didn't bother doing it.'
'It should be mandatory. Just because if it's optional people might just give it a miss because at that age they don't really see the importance.'
'It definitely should've been compulsory. People don't go out of their way to do stuff anymore, you know, learn. People don't go out of their way to learn anymore, so if it was compulsory it would've been something that we all knew.'
'I don't see why it shouldn't be mandatory. It's something that all of us may need to use at one point in time, whether it be for a family member or just a stranger on the street. I feel like there will probably be a time in one of our lives where we will need the knowledge, I guess.'

Participants also supported the idea of CPR training in high schools because of the large numbers training within this setting would be able to reach, as demonstrated by the quotes '...everyone goes through high school; it's a good place to get everyone in one place to learn and know the skills' and 'It should be compulsory before they leave school. If you see someone on the floor and no one around them knows what to do, they are not in the best care. But if a couple of people know what they are doing they still have a fighting chance'.

Conversely, two participants felt that CPR training in high schools either should not be mandatory or was not beneficial. One participant felt that the training should be voluntary only, as 'Not everyone wants to do it. There will always be some people out there that don't want to do it and forcing them to do it is just a bad move, you know bad things can come out of it, they go onto social media saying "blah blah blah done this and now I hate St John's Ambulance" because they did this and you don't want that'.

Discussion

As a vast percentage of cardiac arrests occur out-of-hospital (13), the provision of bystander CPR to a patient experiencing cardiac arrest can be the determinant between life and death. Therefore, a great emphasis is placed on public awareness of CPR, even if only in its most basic form. Unfortunately, bystander CPR provision rates remain low and it is clear that something must be done in an attempt to increase the amount of CPR proficient individuals who are also comfortable performing it (3). Currently in Australia, CPR training programs are not a mandatory part of the education system, and therefore are most commonly undertaken after school years due to meeting work requirements and/or personal interest. Introducing CPR at a young age results in a higher percentage of CPR competent individuals in public settings, as well as higher CPR provision rates (3,4,14). Among participants in our study, CPR was revered as an invaluable life skill that people should be encouraged to learn. Not only did the majority of participants express the importance of CPR but were also aware of the role bystander CPR plays in increasing the odds of survival. Students were more than open to the concept of implementing mandatory CPR programs in high school, with only one individual interviewed suggesting they would not be supportive.

Ours is not the first study to suggest students are open to the concept of mandatory CPR in high school. Schuffelen et al (8) and Kanstand et al (9) found students in The Netherlands and Norway respectively felt CPR should be mandatory within high schools. These studies utilised quantitative survey methodologies. Future Australian research could seek to utilise such methods to corroborate/substantiate our qualitative findings. Among our sample, there was a good understanding of what CPR is, and to what extent it can work to help cardiac arrest victims. However, this knowledge alone seemed ill-equipped to motivate young adults to seek CPR training of their own volition. Many of our participants suggested they had not undertaken CPR training, or maintained their training, due to the associated cost. An Australian survey previously identified cost as a factor limiting the uptake of CPR training in Australia (15). Providing cheaper alternatives to training may work to increase provision rates. Providing mandatory CPR in high school may work to accomplish this. This same survey noted that 78% of those who had undertaken CPR training did so to meet requirements for work or for a community/sports club, with only 16% suggesting their training was self-initiated (15).

Lack of confidence to perform the skill was also noted as a substantial barrier to actual CPR delivery. Not surprisingly, this was more eminent among those not having previously undertaken CPR training. Interestingly, regardless of previous training experience, there seemed a preoccupation with legal repercussions should CPR work to further harm the patient. Several other studies note confusion around this point as a barrier to bystander CPR provision (3,16,17). It may be that basic first aid training in Australia should work to further incorporate knowledge surrounding legal protection for the rescuer, to better arm potential interveners. Our results suggest making clear such information may work to improve confidence to act.

Limitations

There are of course study limitations that require consideration. For example, as is the case with the majority of studies utilising qualitative enquiry, participants in our study may have felt compelled to provide socially desirable responses (18). We attempted to alleviate the potential for this during our consent gathering process by assuring participants that transcribed interviews were to be entirely de-identified, thus encouraging truthful discussion. We also worked to establish a strong rapport with participants both at the beginning of, and ongoing throughout, the interviews (19). Also, there was an uneven gender distribution among our study sample (ie. 19 women, nine men). All women who were approached to participate in an interview participated, whereas only 69% of men approached agreed to participate. This is not surprising given there is clear evidence women are more likely to participate in scientific studies than men (20–22). While no notable differences were inferred between men and women participants with respect to our concepts of interest in this study, it is conceivable a more equal gender distribution would impact on study results.

Further, we acknowledge that were we to interview students presently enrolled in high school, as opposed to those recently graduated, there is the potential for responses to differ. While unlikely, it is conceivable perceptions and attitudes toward CPR provision could change between adolescence and early adulthood. Other pieces of research have noted differences in attitudes and perceptions between high school students and young adults. For example, Johnson, McCaul and Klein (23) found young adults were more understanding of the importance of practising safe sex compared to high school students. Future research could work to replicate our study results with actual high school students, and – similar to Schuffelen et al's study (8) – gauge changes in interest in CPR provision and training with increasing age. Undertaking this research with actual high school students would have the added benefit of including those that do not go on to graduate from high school. Our study dealt with high school graduates only. However, data provided from the Australian Bureau of Statistics suggests 16% of students entering Australian high schools do not continue their studies through to graduation (24).

Conclusion

This small cross-sectional analysis found that the main barrier to performing CPR was a lack of adequate training and knowledge of CPR skills. It is clear that our study sample demonstrated acceptance of the implementation of mandatory CPR programs into Australian high schools. Given the success of such programs being implemented overseas, we suggest further investigation into the appropriateness of such an intervention to be undertaken, with the aim to implement a nation-wide CPR training program among secondary schools in Australia. This proposed intervention has the potential to impact both bystander CPR provision rates and consequently, out-of-hospital cardiac arrest survival rates among the wider Australian community.

Conflict of interest

The authors declare they have no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

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