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Knowledge and Attitude on Basic Life Support Among Childcare Providers from Registered Childcare Centre in Shah Alam, Selangor: A Questionnaire Study

Pengetahuan dan Sikap terhadap Sokongan Hidup Asas dalam Kalangan Pengasuh Kanak-Kanak di Pusat Jagaan Berdaftar di Shah Alam, Selangor: Satu Kajian Soal Selidik

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ABSTRACT

Background: Basic Life Support (BLS) is essential in emergencies, as it provides immediate care that can prevent fatalities, reduce the severity of medical conditions, and improve survival rates before professional help arrives. The increasing number of children in day care centres makes it clear that safety and emergency preparedness must be improved. While childcare providers are the first responders to emergencies such as airway obstruction or cardiac arrest, many childcare providers lack sufficient knowledge and skills in cardiopulmonary resuscitation (CPR). Although Malaysia has required first aid training for childcare providers since 2013 as part of the PERMATA Childcare Course (*Kursus Asuhan PERMATA, KAP*), CPR certification is still not mandatory. Recent guidelines from the Ministry of Women, Family and Community Development now require the presence of at least one staff member certified in CPR to improve safety in childcare settings. Objectives: This study aims to measure the childcare providers' BLS knowledge and attitudes using a questionnaire, identify knowledge gaps and areas where additional training or education in BLS may be needed, and explore factors that may influence childcare providers' attitudes towards BLS training and its implementation in childcare settings. Methods: A cross-sectional survey was conducted to assess the knowledge and attitudes of BLS among childcare providers in childcare centres in Shah Alam. 210 participants took part in the study. A self-administered questionnaire, adapted from a previous study by Tamur et al. (2023), was used to collect data. Results: The study included 210 participants; 99.0% were female, and the largest group was 25–35 years old (44.8%). Most participants held a certificate/diploma (38.1%) or had completed secondary education (35.7%), which could influence their learning style and access to training. In addition, 78.6% of participants had

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already completed CPR training, indicating that childcare providers had a solid foundation of BLS training. The study revealed gaps in the participants' knowledge and skills in CPR. Only 32.4% of participants knew how deeply and quickly to compress the chest. While 66.7% knew the correct ratio of compression to breathing, only 17.6% recognised the correct compression rate. Previous CPR training had a significant impact on knowledge (p=0.02), yet 39.4% of those trained still had poor knowledge. Most participants (98.1%) felt that CPR training should be mandatory, and 93.8% were in favour of more training. Childcare providers' reluctance to perform CPR is due to a lack of knowledge, fear of harm, and legal concerns. Although 78.6% of respondents have attended training courses, more than half do not know where they can attend courses. Conclusions: This study reveals significant gaps in the CPR knowledge and skills of childcare providers in registered childcare centres in Shah Alam despite a high percentage (78.6%) having attended prior training. Although many participants knew the basic principles of CPR, critical deficiencies were identified, particularly in the depth, rate and frequency of chest compressions. The findings indicate that prior CPR training has a positive effect on knowledge (p=0.02), but a significant proportion of those trained still showed poor understanding. Most participants (98.1%) recognised the importance of CPR training and were in favour of making it mandatory. 93.8% expressed a desire for further training. However, uncertainty about where to access CPR courses remains a challenge. These findings highlight the need for improved training programmes, easier access to courses and more vigorous enforcement of CPR course certification requirements for childcare providers to improve emergency preparedness and child safety in day care settings.

Keywords: *Basic Life Support (BLS); Cardiopulmonary Resuscitation (CPR); Childcare Providers; Attitude Towards CPR*

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1. Introduction

In today's society, which is characterised by nuclear families and the changing role of women, many children spend more time in day care centres or kindergartens than at home (Yang & Kwon, 2014). According to childcare statistics from 2012, the number of day care centres has risen steadily, increasing 2.2-fold from 19,276 in 2000 to 42,527 in December 2012. At the same time, the number of children using these day care centres has also doubled. It rose from 686,000 in 2000 to 1,487,361 in December 2012, exceeding the data reported by Statistics Korea in 2012 (Yang & Kwon, 2014). This upward trend is expected to continue, driven by a growing demand for full-day care programmes and the expansion of childcare subsidies.

With children spending significant portions of their day in childcare facilities, providers play a critical role in safeguarding their health. Childcare workers are often the first individuals to recognise and respond to emergencies such as choking, respiratory distress, near-drowning, or sudden collapse. Early and effective intervention, especially through the timely application of Basic Life Support (BLS) techniques, is vital for preventing severe complications and improving survival outcomes. As paediatric emergencies can escalate

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rapidly, caregivers' ability to perform cardiopulmonary resuscitation (CPR) confidently and correctly is essential.

Recent Malaysian studies consistently demonstrate substantial gaps in BLS knowledge and confidence among childcare providers. Abdullah, Shukri, Sjahid, Bakar, Yaacob, and Fauzi (2025) reported that nearly two-thirds of home-based childcare providers lacked adequate CPR knowledge, with training exposure identified as the strongest predictor of competency. Azmani, Effendy, Abu, Addnan, Rashid, Hayati, Isahak, and Juliana (2019) found that targeted first aid programmes significantly improved providers' knowledge and boosted their confidence in responding to emergencies. Similarly, Fariduddin and Siau (2021) highlighted that most potential caregivers have limited access to BLS information and experience considerable fear about performing CPR. These findings indicate that although awareness of the importance of emergency response is growing, barriers to effective implementation persist.

Despite the rapid growth of childcare services in Malaysia, there remains limited research focusing specifically on the BLS knowledge and attitudes of childcare providers working in registered centres. Existing studies tend to examine school teachers, parents, or the general public rather than those directly responsible for infants and toddlers in day care environments. Furthermore, little is known about the preparedness of childcare providers in urban areas such as Shah Alam. Therefore, this study aims to assess the level of knowledge and attitudes toward Basic Life Support among childcare providers in registered childcare centres in Shah Alam, Selangor.

1.2 Basic Life Support Requirement in Policy or Guideline for Childcare Centres and Pre-Schools in Malaysia

The government and several agencies have endeavoured to improve the health and safety of children, in particular by revising guidelines and monitoring health and safety issues. The Ministry of Housing and Local Government is also enforcing guidelines for kindergartens and day care centres, including the need for caregivers of kindergartens and day care centres to have a first aid certificate as a prerequisite for establishing the facility in question 2017. Since 1 January 2013, the PERMATA Childcare Course (KAP) has been mandatory for business owners, managers, supervisors and babysitters, replacing the Basic Childcare Course (KAAK) from 1988. This enforcement is under the Child Care Centre Act 1984 and the Child Care Centre Regulations 2012. Under the KAP, the modules relating to the health and safety components continue to be mandatory modules conducted by the Malaysian Ministry of Health. However, this health and safety module only involves imparting first aid skills to the participants and the risks of injuries and accidents in the childcare centre.

However, there are no regulations or laws requiring employers or carers to complete the BLS course. This is quite worrying as it relates to the statistics released by the Ministry of Women Development, Family and Community in the Minister's oral reply in the first sitting of the fourteenth session of Parliament on 20 August 2018. Of these, 13 cases were in registered childcare centres and 16 in non-registered childcare centres. For the year 2013 to July 2018, 27 deaths were reported to the Royal Malaysia Police that occurred in the babysitter's home. The lack of a legal requirement for BLS training can lead to childcare providers not placing enough emphasis on acquiring these important skills. Without a legal mandate, many employers and caregivers may not see the need to invest time and resources in BLS training.

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1.3 Importance of Basic Life Support Knowledge Among Childcare Providers

Before entering first grade, children spend approximately 12,500 hours in a childcare centre (Mohidin, Ismail & Ramli, 2015). Childcare centres have become indispensable due to the professional demands of parents in the age of modern globalisation. The increasing need for such facilities has led to a growing number of unintentional injuries in childcare centres, which could potentially lead to negligence lawsuits, with one of the challenges being the failure of caregivers to provide adequate first aid, including essential BLS skills (Azmani et al., 2019). Therefore, childcare providers need to have the knowledge, attitude, and confidence to deal with various emergencies effectively.

1.4 Competency Duration of Basic Life Support (BLS)

Basic Life Support (BLS) certification is required for healthcare professionals such as doctors, nurses, and paramedics and can also be useful for teachers, lifeguards, childcare providers, and anyone wishing to acquire lifesaving skills. The duration of Basic Life Support (BLS) certification usually varies by organisation and country. However, according to the American Heart Association, the duration for BLS certification is two years (Heart CPR, *2024*).

After two years, they must renew their BLS certification to ensure that they have up-to-date knowledge and skills for responding to cardiac emergencies. Basic Life Support (BLS) refresher courses can improve one's competencies, reinforce skills and extend the validity of certification for another two years (American Red Cross Training Services, 2025). In a study by Fariduddin and Siau (2021), student teachers knew about CPR after training, but their ability to recall it decreased over time, suggesting that the recommended two-year refresher course may not be the best approach. Instead, all student teachers should take regular refresher courses, possibly with hands-on practise, to prevent their CPR knowledge and skills from declining quickly.

2. Methods

2.1. Study Design and Setting

A cross-sectional survey was conducted to assess the knowledge and attitude towards BLS among childcare providers in registered childcare centres in Shah Alam. Ethical approval was obtained from *Jawatankuasa Etika Penyelidikan Universiti Selangor*, and informed consent was obtained from all participants before data collection. The survey was conducted face-to-face or online, depending on the participants' preferences.

2.2. Study Population

The study population consisted of childcare providers from 126 institutional childcare centres in Shah Alam registered under *Jabatan Kebajikan Masyarakat* (JKM). Inclusion criteria consisted of childcare providers including educators, assistants, or supervisors working in registered TASKA in Shah Alam, aged 18 years and above, and able to read and understand Malay or English. Exclusion criteria included administrative staff with no childcare responsibilities, temporary or trainee childcare workers, and childcare providers who were on long-term leave during the data collection period.

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2.3. Sample Size

The original target sample size was 295 participants, calculated using the Raosoft sample size calculator based on a 95% confidence level and a 5% margin of error. However, due to constraints such as limited responses, scheduling conflicts, and participant availability, the final sample comprised 210 respondents. Although a probability-based sampling approach was initially planned, these practical limitations resulted in the use of convenience sampling, whereby all eligible and willing childcare providers were included. While the final sample did not meet the original target, it still offers meaningful insights into trends and gaps in childcare providers' BLS knowledge and training.

2.4. Tools of Data Collection

A self-administered questionnaire, adapted with permission from Tamur et al. (2023), was used to assess childcare providers' knowledge and attitudes towards BLS. Three experts reviewed the adapted instrument to ensure content validity: two nursing lecturers certified in Basic Life Support (BLS) and a senior childcare training instructor. Following the expert review, minor revisions were made to refine item wording and enhance the clarity and relevance of the questionnaire for childcare providers. The questionnaire consisted of six sections: (1) demographic information on age, gender, education, and work experience; (2) previous CPR training to assess previous experience with BLS; (3) BLS knowledge with ten questions on CPR procedures; (4) attitudes towards BLS to assess readiness and perceptions of training; (5) barriers to CPR to identify challenges such as fear or legal concerns; and (6) resuscitation experience to assess previous hands-on practise. Knowledge was scored with one point per correct response, with a maximum of 10 points. The scores were categorised as good (>75%), fair (50–74.9%), or poor (<50%). The questionnaire was distributed online and in person to childcare providers in registered centres in Shah Alam.

2.5. Statistical Analysis

The data were analysed using SPSS version 29. In the descriptive statistics, the demographic characteristics and previous training status were summarised, including frequencies, percentages, means, and standard deviations. The knowledge scores were categorised as good (>75%), fair (50–74.9%), and poor (<50%) for further analysis. In line with the study objectives to identify knowledge gaps and explore factors that may influence BLS knowledge and attitudes, Chi-square tests were conducted to examine the associations between sociodemographic characteristics, previous training experience, and levels of BLS knowledge and attitudes. These analyses helped determine whether certain factors were related to variations in knowledge and attitudes among childcare providers. Statistical significance was set at $p < 0.05$.

3. Results and Discussion

The sociodemographic characteristics of the participants are summarised in Table 1. Of the 210 respondents, 208 (99.0%) were female, and only 2 (1.0%) were male. The largest age group was those aged 25–35 years, comprising 94 of 210 participants (44.8%), followed by those aged <25 years (63 participants, 30.0%). In terms of educational background, 80 participants (38.1%) held a certificate or diploma, while 75 (35.7%) had completed secondary education, indicating an intermediate level of formal education among the majority of participants.

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A total of 165 participants (78.6%) reported having received CPR training previously, reflecting a relatively high proportion of CPR-trained individuals in the sample. Among these, 105 of 165 (63.6%) received training from private organisations, 36 (21.8%) at another workplace, and 22 (13.3%) through in-house training at their current institution, with a small proportion (2 of 165; 1.2%) trained by NGOs such as the Red Crescent or St John. This trend highlights the significant role of private and non-governmental organisations in providing CPR training and supporting life-saving skill development. The duration since their most recent training varied, with 68 of 165 (41.2%) having trained within the past six months.

Table 1. Different sociodemographic details of the participants

Sociodeographic Characteristics		*n* (210)	%
Gender	Female	208	99.0%
	Male	2	1.0%
Age	<25	63	30.0%
	25-35	94	44.8%
	36-45	34	16.2%
	46-55	15	7.1%
	>55	4	1.9%
Educational qualification	Primary	1	0.5%
	Secondary	75	35.7%
	Pre-University	25	11.9%
	Certificate/Diploma	80	38.1%
	Bachelor Degree	27	12.9%
	Post-graduate	2	1.0%
Had Attended CPR Trainning	Yes	165	78.6%
	No	45	21.4%
CPR trainning Provider (*n* =165)	In-house (Current institution)	22	13.3%
	Private organisation	105	63.6%
	NGOs (Red Cresent/ St John/etc)	2	1.2%
	Another workplace	36	21.8%
Duration since attended the CPR Training (*n* =165)	0-6 months	68	41.2%
	7-12 months	29	17.6%
	13-24 months	12	7.3%
	>2 years	56	33.9%

A chi-square test of association was conducted to explore whether previous CPR training was related to the level of CPR knowledge among childcare providers, in line with the study's objective of identifying factors that may influence BLS knowledge. The results showed a statistically significant association between previous CPR training and knowledge level ($p = 0.02$), indicating that participants who had received CPR training were more likely to demonstrate higher knowledge scores than those without training (Table 2).

A significant association was also found between educational level and CPR knowledge ($p = 0.03$). Participants with higher educational qualifications generally demonstrated better knowledge scores. For instance, those with a bachelor's degree showed the highest proportion

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of good knowledge (51.9%), compared to only 31.3% among certificate or diploma holders and 21.3% among those with secondary education. Participants with pre-university qualifications mostly fell into the fair category (56.0%), while no participants with primary education demonstrated good knowledge. These findings suggest that higher educational attainment may contribute to better comprehension and retention of CPR-related information, although gaps remain across all groups.

Table 2: Knowledge level based on different sociodemographic characteristics.

Sociodemographic Characteristics			Knowledge Level			*p* Value
			Poor	Fair	Good	
Age	<25	*n*	20	23	20	0.25
		%	31.7%	36.5%	31.7%	
	25-35	*n*	15	45	34	
		%	16.0%	47.9%	36.2%	
	36-45	*n*	4	18	12	
		%	11.8%	52.9%	35.3%	
	46-55	*n*	3	8	4	
		%	20.0%	53.3%	26.7%	
	>55	*n*	0	3	1	
		%	0.0%	75.0%	25.0%	
Educational Level	Primary	*n*	1	0	0	0.03*
		%	100%	0	0	
	Secondary	*n*	20	39	16	
		%	26.7%	52.0%	21.3%	
	Pre-University	*n*	3	14	8	
		%	12.0%	56.0%	32.0%	
	Certificate/Diploma	*n*	13	34	33	
		%	16.3%	42.5%	41.3%	
	Bachelor Degree	*n*	5	8	14	
		%	18.5%	29.6%	51.9%	
	Post-graduate	*n*	0	2	0	
		%	0%	100%	0%	
Previous Training in CPR	Yes	*n*	65	77	23	0.02*
		%	39.4%	46.7%	13.9%	
	No	*n*	23	22	0	
		%	51.1%	48.9%	0.0%	
Time since received CPR training (*n* = 165)	0–6 months	*n*	11	27	30	0.67
		%	16.2%	39.7%	44.1%	
	7–12 months	*n*	8	12	9	
		%	27.6%	41.4%	31.0%	
	13–24 months	*n*	3	6	3	
		%	25.0%	50.0%	25.0%	
	>2 years	*n*	12	26	18	
		%	21.4%	46.4%	32.1%	

Despite the relatively high proportion of participants with prior CPR training, notable gaps in knowledge were still evident. Among those who had received training, only 13.9% demonstrated good knowledge, while 46.7% had moderate knowledge and 39.4% had poor

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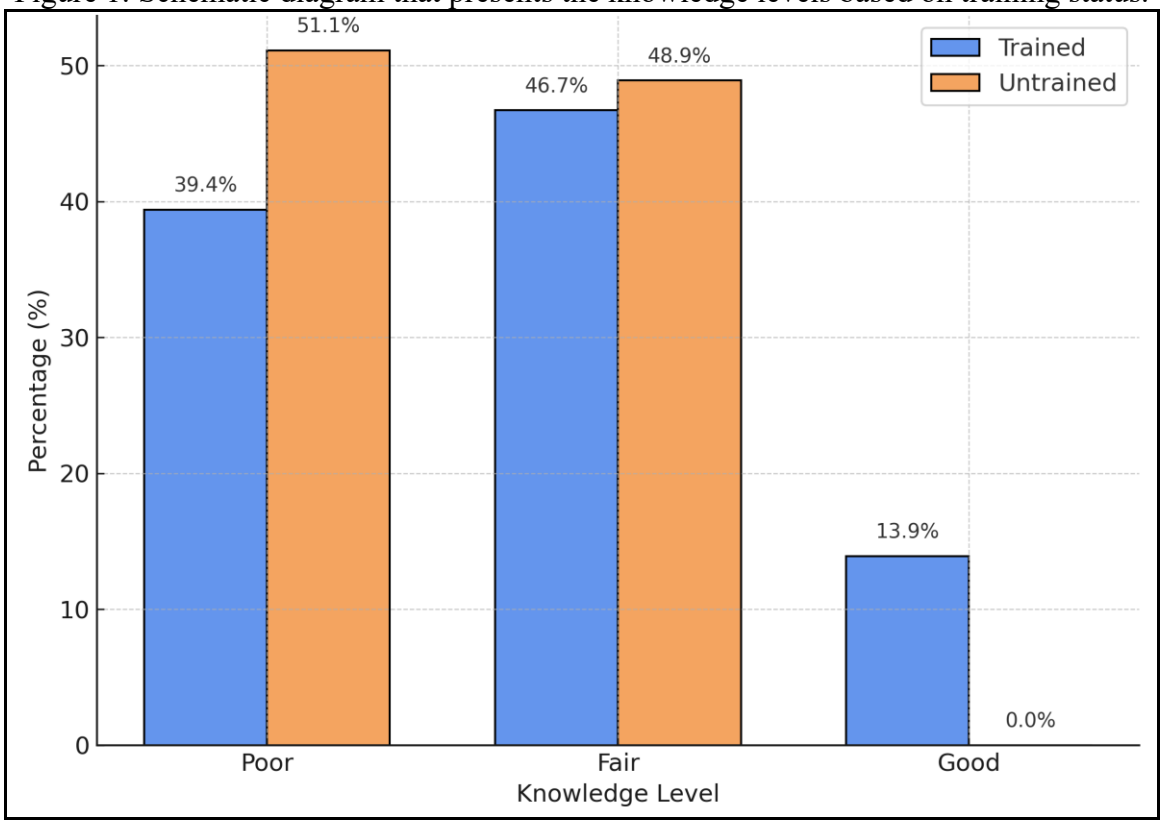
knowledge (Figure 1). These findings suggest that although training contributes to improved understanding, it may not be sufficient to ensure long-term retention of CPR knowledge and skills.

Figure 1: Schematic diagram that presents the knowledge levels based on training status.



The findings are consistent with previous research consistently showing that BLS training significantly improves the knowledge and skills of healthcare providers and students (Govender et al., 2010; Ilyas et al., 2014; Borovnik Lesjak et al., 2022; Srivilaithon et al., 2020). However, retention of CPR skills tends to decline over time, with practical skills declining faster than theoretical knowledge. Studies have shown that while knowledge remains relatively stable, practical CPR skills can decline significantly within five to six months of training (Borovnik Lesjak et al., 2022; Srivilaithon et al., 2020). In fact, CPR skills usually deteriorate within three months and plateau between three to six months post-training (Riggs, Franklin & Saylany, 2019). This highlights the importance of regular refresher training, ideally every three to six months, to maintain CPR skills and ensure that childcare providers are prepared to respond effectively in emergencies.

In terms of specific CPR knowledge domains (Table 3 and Figure 2), 62.9% of participants were able to correctly identify the essential first steps when encountering an unresponsive person, indicating a basic understanding of primary life support. However, knowledge gaps were identified in key aspects of effective CPR. While 66.7% of participants knew the recommended compression-to-ventilation ratio of 30:2, only 32.4% were able to correctly

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state the correct depth of chest compression (at least 5 cm) and the correct rate of 100–120 compressions per minute. In addition, 69% of participants knew the correct placement of the hands during chest compressions, but only 17.6% knew the recommended compression rate of approximately two compressions per second. These findings suggest that more emphasis needs to be placed on practical training and reinforcement of the key components of CPR.

Table 3: Questions related to CPR knowledge and skills

Question Related to CPR Knowledge and Skills

Questions		*n*	%
The correct number of Malaysian Emergency Response Services (MERS)	999*	210	100.0%
	998	0	0.0%
	997	0	0.0%
You are alone and come across an apparently lifeless adultperson. What do you do?	Check for consciousness, secure the airway, and check if the patient is breathing*	132	62.9%
	Check for pulse	69	32.9%
	Immediately start chest compressions	9	4.3%
It turns out the patient is breathing but shows no response to verbal stimuli. What do you do?	Check for pulse	32	15.2%
	Immediately start chest compressions	67	31.9%
	Put the patient in the recovery position and call for an ambulance*	111	52.9%
You decide to perform CPR. Which of the following combinations of chest compressions and ventilations would you choose?	2 rescue breaths and 30 chest compressions	36	17.1%
	30 chest compressions and 2 rescue breaths*	140	66.7%
	30 chest compressions and 5 rescue breaths	34	16.2%
What is the appropriate depth and rate for chest compressions?	4–5 cm and 100/min	65	31.0%
	At least 5 cm and 100–120/min*	68	32.4%
	I don't know	77	36.7%
What is the purpose of the automated external defibrillator?	To analyse the heart rhythm	27	12.9%
	To analyse the heart rhythm and, if necessary, to give an electric shock*	134	63.8%
	To give cardiac massage	6	2.9%
	I don't know	43	20.5%
Who is allowed to use an automated external defibrillator (AED)?	Every citizen*	32	15.2%
	Only emergency personnel	57	27.1%
	Only skilled people	121	57.6%
Does the respondent kneel next to the torso?	No	11	5.2%
	Yes*	199	94.8%
How is the hand placement on the torso?	Use one hand as a fist	4	1.9%
	Two hands next to each other	15	7.1%
	Place one hand above the other with palms of the hands downwards*	145	69.0%
	Cross the fingers of both hands	38	18.1%
	Not able to place hands	4	1.9%
	Use of one hand	4	1.9%
What is the appropriate chest compression frequency to be done in CPR?	<1 compression/1 s	24	11.4%
	1 compression/1 s	35	16.7%
	1 compression/2 s	86	41.0%
	2 compression/1 s*	37	17.6%
	>2 compression/1 s	25	11.9%
	Irregular compression	3	1.4%

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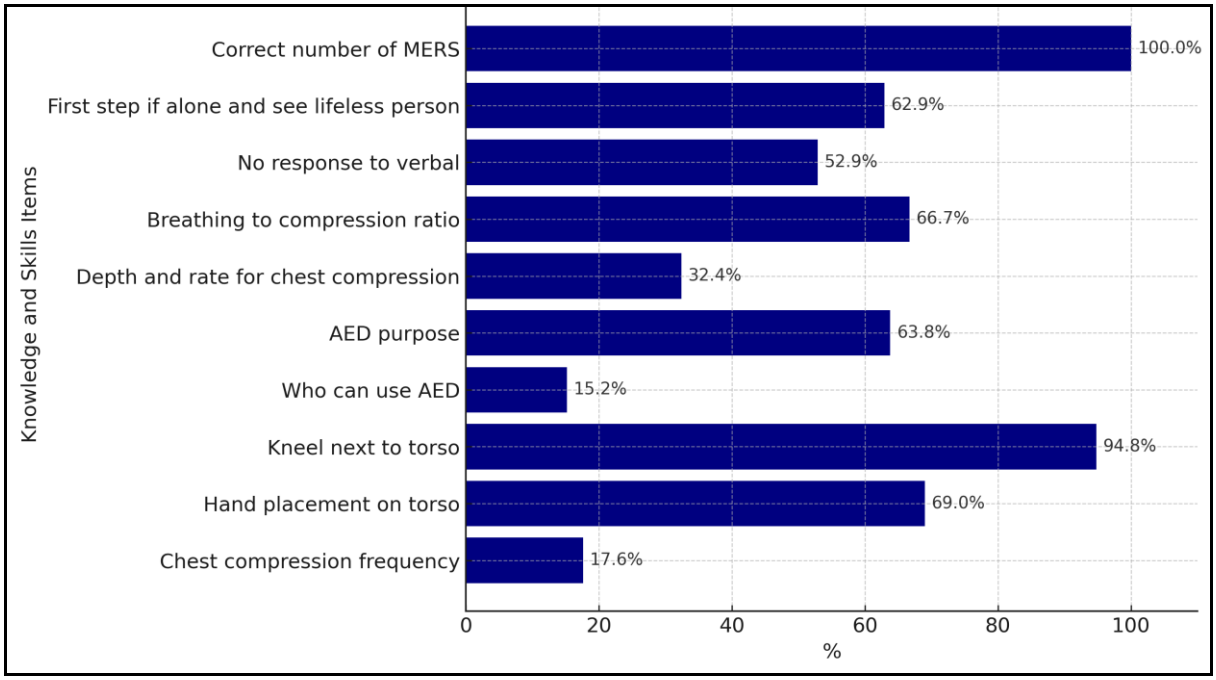
Figure 2. Graphic bars show the percentages of the correct responses to the knowledge and skills elements of the CPR assessment.



The study found that 63.8% of participants were able to correctly identify the function of an automated external defibrillator (AED), as illustrated in Figure 2. However, a significant number (57.6%) incorrectly believed that only trained professionals can use an AED (Table 3). This misconception emphasises the importance of education as AEDs are designed for public use and should be accessible to everyone in an emergency. Similar misconceptions are reported worldwide, with up to 63% of respondents in some regions not knowing what an AED is and only 27% understanding that AEDs are public devices (Misztal-Okońska et al., 2017). Raising awareness of the accessibility of AEDs and their role in emergency response could increase bystander intervention rates in cardiac arrest cases.

Participants' attitudes towards CPR were overwhelmingly positive, with 98.1% agreeing that CPR training is essential and should be made mandatory and 82.9% in favour of including CPR in all occupations as a mandatory requirement (Table 4). This widespread support indicates a strong recognition of the life-saving potential of CPR and a willingness to improve emergency preparedness in various areas. In addition, 69.5% of participants expressed a strong motivation to prevent unnecessary deaths, emphasising the ethical and humanitarian aspects of CPR training.

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Table 4: Perceptions and attitudes towards CPR.

Perceptions and attitudes towards CPR

Perceptions and Attitudes		n	%
Reason for not receiving CPR training (n = 45)	Costs	10	22.2%
	Lack of time	1	2.2%
	Little interest	1	2.2%
	Not sure where to attend course	24	53.3%
	No answer	9	20.0%
Perception regarding reasons that make a person hesitate to start CPR	Afraid of contagious diseases through mouth-to-mouth breath	23	11.0%
	Afraid of legal consequences	8	3.8%
	Causing potential harm to the person in need	22	10.5%
	Emotional reasons	1	0.5%
	Lack of proper knowledge and skills	156	74.3%
Require more training in CPR	No	4	1.9%
	Yes	206	98.1%
Reason for requiring more CPR training	Heart disease within the family	21	10.0%
	Wish of avoiding unnecessary death	146	69.5%
	Other reasons	43	20.5%
Would like to attend CPR if it is of no cost	No	5	2.4%
	Yes	205	97.6%
Think CPR training should be mandatory	Yes, at school	25	11.9%
	Yes, to obtain a driving license	0	0.0%
	Yes, training should be mandatory in every job	174	82.9%
	No, CPR training should be optional	11	5.2%
CPR training part of the educational plan in the school	No	39	18.6%
	Yes	171	81.4%
Think that CPR training should be a requirement for obtaining a teaching job	No	13	6.2%
	Yes	197	93.8%
Think that an automated external defibrillator should be available in every school	No	23	11.0%
	Yes	187	89.0%
Seen doing real CPR	No	145	69.0%
	Yes	65	31.0%
Performed CPR in real	No	148	70.5%
	Yes	62	29.5%

Despite this positive attitude, several barriers to performing CPR were identified in the study. Participants reported concerns such as lack of knowledge and skills, fear of contracting contagious diseases, uncertainty about legal consequences and fear of harming the victim. These fears can contribute to hesitation or procrastination in responding to emergencies. In addition, 22.2% of respondents indicated that cost was a major barrier to attending formal CPR training, further highlighting the need for affordable or subsidised training opportunities. Other barriers to attending CPR classes in disadvantaged communities include fear of legal repercussions, concern for personal safety, and lack of community cohesion (Uny et al., 2022). To improve CPR education and lay resuscitation rates in these areas, programmes should address financial constraints, provide clear information and take cultural factors into account (Sasson et al., 2013; Uny et al., 2022).

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Another notable finding was that 53.3% of participants did not know where to access CPR training, indicating a gap in awareness and accessibility of training programmes. This problem is not unique to this study, as similar issues were found around the world. In China, lay people reported not knowing where to get CPR training (Dong et al., 2023), while a study of older African Americans found that 74% did not know where to turn for CPR training (Demirovic, 2004). Research shows that cost can also hinder learning CPR, particularly in low-income communities (Sasson et al., 2013). Low-cost alternatives such as instructor-led distance learning have shown promise as outcomes in CPR skill acquisition are comparable to those of conventional classroom training (Han et al., 2021). However, traditional small-group learning may still be more effective than internet-based courses for teaching CPR (Mäkinen et al., 2006). Therefore, CPR training programmes should consider financial constraints, accessibility, and community-specific needs when designing training initiatives.

Encouragingly, many respondents showed a strong interest in further CPR training (93.8%), with 89% stating that they would attend if it was offered at no cost. However, 31% of participants had witnessed a real-life CPR scenario, while only 29.5% had performed CPR themselves. This suggests that while participants have been exposed to CPR situations, there is still a need for more hands-on practise to improve confidence and effectiveness in real emergencies. Addressing these barriers through increased public education campaigns, affordable training opportunities, and clearer information about the availability of training could significantly improve bystander response rates and chances of survival in emergencies.

4. Strengths and Limitations

This study provides valuable insights into the current state of BLS knowledge and attitudes among childcare providers. A key strength is the focus on a critical but understudied population, emphasising the importance of emergency preparedness in childcare settings. However, the study also has some limitations. The use of self-report data may lead to response bias, as participants may have overestimated their knowledge and confidence in performing CPR. In addition, the cross-sectional design limits the ability to assess long-term knowledge retention and the effectiveness of training interventions. Future research could benefit from longitudinal studies that assess the impact of refresher courses and practical training sessions on CPR skills over time.

5. Conclusion

This study identifies strengths and gaps in childcare providers' BLS knowledge and attitudes. Significant knowledge deficits were found in areas such as depth and frequency of chest compressions and use of AEDs, while some participants showed positive attitudes towards CPR training. The findings highlight the need for continued training, regular refresher courses and better access to CPR training programmes. Removing barriers such as cost, lack of awareness, and psychological concerns could improve participation and confidence in performing BLS. Strengthening CPR training for childcare providers is vital to ensure a timely and effective response to paediatric emergencies and ultimately improve survival rates in childcare settings.

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