International Journal of Pediatrics and Adolescent Medicine 8 (2021) 160–164

HOSTED BY

Contents lists available at ScienceDirect

International Journal of Pediatrics and Adolescent Medicine

journal homepage: http://www.elsevier.com/locate/ijpam

Saudi pediatric residents' confidence in handling ethical situations and factors influencing it

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ARTICLE INFO

Article history:
Received 13 November 2019
Accepted 29 March 2020
Available online 7 April 2020

Keywords:
Ethics
Pediatric resident
Ethics education
Ethical dilemmas

ABSTRACT

Background: During their residency program, pediatric residents frequently face ethical challenges. The aim of the study is to evaluate the pediatric residents' knowledge and confidence to handle common ethical dilemmas during their training.

Methods: This is a survey-based cross-sectional study on all pediatric residents in the largest pediatric training center in Saudi Arabia. The survey had six sections: a) Demographics and self-assessment of religiosity, b) Sources of ethics education, c) Degree of confidence in dealing with ethical challenges in clinical practice, d) Rating of the quality of ethics education during residency, e) Agreement or disagreement regarding ten ethical scenarios, and f) Confidence level in handling 21 different ethical situations.

The response to the survey questions was based on a Likert scale; the survey was electronically distributed to all pediatrics residents. Mean knowledge scores and 95% confidence intervals (CI) were calculated for each independent variable to test for associations. Comparisons were made using an independent t-test or an ANOVA test when there were more than two groups.

Result: Eighty residents responded to the study (85.1% response rate). Over 60% reported that the best source of ethical education for them was through discussions with a senior physician and it was through formal lecturers in 13.8%. One-fifth felt confident in dealing with ethical challenges. Only 2.5% rated the ethics education as "very good/excellent" and 12.5% rated the "support from residency program for ethics education" as being "very good/excellent." Agreement of more than 80% was only noted for 4 of 10 of the ethical scenarios. Overall, only 16.4% felt "confident/extremely confident" in handling different ethical situations while 38.5% felt "not confident/a little confident" with more confidence among male residents (35.3% versus 18.7% $p = 0.01$). Marital status, year of residency, religiosity, and source of ethics knowledge had no impact on the level of confidence.

Conclusion: Overall, the ethics education was considered inadequate. Only one fifth had the confidence in dealing with ethical situations. Gender but not marital status, year of residency, religiosity, or source of ethics knowledge had an impact on the level of confidence in handling ethical situations.

1. Introduction

Ethics has been defined as the science of morals and rules of conduct, recognized in human life [1]. The ethical dimension of patient care has become increasingly important and influential during the last three decades, with more attention being paid toward the moral role of the physician in his work throughout his/her career [2].

Since the 1980s, many organizations and higher medical

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Peer review under responsibility of King Faisal Specialist Hospital & Research Centre (General Organization), Saudi Arabia.

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https://doi.org/10.1016/j.ijpam.2020.03.009

education authorities have directed that the teaching of medical ethics should be embedded in the curriculum and training of physicians [3].

As medical decisions become increasingly complex, medical ethics have evolved from pure theoretical and philosophical discipline to applied ethical principles that assist in the resolution of daily ethical dilemmas in clinical care [4,5].

Pediatric medicine is particularly important in promoting the health of children in society [6]. Ethical issues here are different and unique because medical decisions depend on a triad of stakeholders: the patient, the family, and the health care professionals [2]. Personal biases and differences in mindsets between the stakeholders may raise difficulties in solving ethical problems [7].

During the residency training programs, pediatric residents frequently face ethical challenges related to general and subspecialty pediatric practice. The approach to these ethical issues is a skill that must be learned and practiced over time [8,9].

It is the role and duty of a senior physician to train residents as to how to approach ethical issues by teaching and by example [10,11]. However, there is still a vast gap between what is required and what is actually provided in terms of ethics teaching during the residency program, and trainees are still dissatisfied with the quality of their training and experience in medical ethics [11,12]. Thus, what is required is the identification of obstacles to optimal ethical training faced in the teaching of ethics and how best to facilitate it [6,7,13].

There is a need for scientific research to identify and guide educational planning, to see how the formal curriculum in ethics affects ethical awareness among pediatricians. A study conducted in 2004 showed that 45% of pediatric residents rated their ethics education as fair to poor [14].

Pediatric residency program should enhance the skills of the residents to have the confidence and knowledge to face various ethical issues that may arise in different care settings [7,12,13,15].

There are no studies that are uniquely associated with pediatric training in Saudi Arabia or Arab countries with its special cultural and religious environment.

This is a cross-sectional survey of pediatricians in the residency program to evaluate the pediatric residents' views on ethical scenarios and their confidence in handling common ethical dilemmas during their training. We hope to utilize the knowledge gained, to enhance the current efforts to teach medical ethics to pediatric residents.

2. Methods

The study involved pediatric residents at King Abdulaziz Medical City (KAMC) residency program at all levels of the program in Riyadh. This center is the largest pediatric training center in the Kingdom of Saudi Arabia with 94 residents at different levels of training (R1-R4). A survey-based cross-sectional study was carried out. All pediatric residents in the KAMC residency program were approached. The survey was sent to all the residents electronically in December 2018, with a reminder two and four weeks later to those who did not respond. Additional email messages and word of mouth were utilized to encourage a maximum response rate.

A self-administered validated questionnaire was adopted from a survey that was developed at the Children's Hospital Boston, USA, 2005 [14] and modified by the researcher. The instrument was applied in English, two experts in the field assessed the modified version, and a pilot study was performed to assess its understandability.

The survey had 6 sections a) Demographics and self-assessment of religiosity, b) Sources of ethics education, c) Overall degree of confidence in dealing with ethical challenges in clinical practice, d) Rating of the quality of ethics education during residency, e) Agreement or disagreement regarding ten ethical scenarios and f) Confidence level in handling 21 different ethical situations.

Confidentiality and anonymity of the participants were assured. Once the residents answered the survey, they were considered as agreed to participate in the study.

2.1. Statistical analysis

Analyses were mostly descriptive; the response to the survey questions about the confidence level of dealing with various ethical situations were based on the Likert scale. We limited the options into 3 categories ("not at all confident" or "a little confident," "moderately confident," and "confident" or "extremely confident"). Then, we conducted a contingency analysis, bivariate and logistics regression analysis, to identify factors affecting the level of confidence in confronting the ethical challenges that respondents face.

Mean knowledge scores and 95% confidence intervals (CI) were calculated for each independent variable to test for associations. Comparisons were made using an independent t-test or an ANOVA test, when there were more than two groups. Chi-Square was used for contingency analysis and Student's t-test for bivariate analysis.

The collinearity between independent factors was calculated using the variance inflation factor (VIF). Deliberation of the logistic regression model was assessed using the receiver operating characteristics curve. A P-value < 0.05 was considered as statistically significant. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0 for Windows.

3. Results

All 94 pediatric residents at KAMC were approached for the study and 80 responded (response rate of 85.1%). The mean age was 26.2 (1.3) years. Of those enrolled, 42.5% were male participants. The year of residency was R1, R2, R3, and R4 in 28.4%, 30%, 22.5%, and 19.1%, respectively. The self-reported degree of religiosity was "low" at 10%, "moderate" at 71.3%, and "high" at 19.7% (Table 1). Over 60% of the residents reported that the best source of their ethical education was through discussions with senior physicians, 13.8% through formal lectures, and 17.5% through reading ethics books and journals. Just one-fifth of the residents said that they were confident in dealing with ethical challenges in clinical practice, while 15% said that they were not confident and 65% of the residents said that they were "somewhat confident" (Table 2).

Overall, only 2.5% of the residents rated the ethics education

Table 1
Demographic characteristics.

Characteristics	No (%) of 80 participants
Age, mean (SD)	26.2 (1.3) years
Gender	
Male	34 (42.5)
Female	46 (57.5)
Marital status	
Single	67 (85.8)
Married	13 (16.2)
Year of residency	
R1	23 (28.4)
R2	24 (30)
R3	18 (22.5)
R4	15 (19.1)
Religious background	
0-3 (Low)	8 (10)
4-7 (Moderate)	57 (71.3)
8-10 (High)	15 (19.7)

*SD: Standard deviation.

Table 2
Personal preference and opinion.

Learning method and opinion	No (%) of 80 participants
What is the best source of learning ethics for you?	
Discussions with senior physicians	49 (61.2)
Formal lectures	11 (13.8)
Reading ethics journals or books	14 (17.5)
Other	6 (7.5)
Are you confident in dealing with ethical challenges in clinical practice?	
Yes	16 (20)
No	12 (15)
Somewhat	52 (65)

during residency as "very good/excellent," while 47.5% reported as "Fair/Poor," only 12.5% rated the "support from residency program for ethics education" as "very good/excellent." On the other hand, 37.5% rate it as "Fair/Poor," and only 25% "MRPs pay attention to the ethical dimension of patient care" as "very good/excellent," while 17.5% as "Fair/Poor." However, around 50% rated each of these categories as "good."

Of the ethical scenarios recorded, the highest agreement was noted for "a child's parents should be always informed of wrongdoing" (83.7%). Around 90% disagreement rates were reported for each of the following: "doctors and nurses should refuse to treat a violent patient" (96.3%), "If a patient wishes to die, he or she should be assisted in doing so" (88.7%), and "confidentiality of a child patient is not important" (95%) (Table 3).

The highest confidence levels were seen in dealing with "discussing newborn screening with parents of a newborn infant" (45%), and "using opioids at the end of life" (30%). On the other hand, the lowest confidence levels were seen in "making decisions about life-sustaining therapies for infants with severe neurocognitive disabilities" (58.7%) and "deciding about withdrawing assisted ventilation" (66.2%).

Overall confidence levels were "not confident/a little confident" in 38.5% of the residents, "moderately confident" in 42.1% of the residents, and "confident/extremely confident" in 16.4% of the residents (Table 4).

More male residents than female reported confidence in handling ethical situations (35.3% versus 18.7% $p = 0.01$). Marital status, year of residency, religiosity, and source of ethics knowledge had no impact on the level of confidence (Table 5).

4. Discussion

Our study shows an obvious preference by the residents for discussions with the senior physician as a source of ethics education, followed by reading ethics books, and formal lectures. A study done by Kesselheim et al. [14] report a similar finding: the most favorite way of learning ethics was discussing of cases with senior physicians (89.3%), while 53.3% of residents felt that formal ethics teaching conferences can be useful, with the least influence reported for reading medical journals and ethics texts [14,16].

Other studies showed physicians preferred to learn ethics through lectures, books, and journals [17–19], which raises the possibility that junior doctors may be uncomfortable in discussing ethical problems with their seniors [20].

Reports from the USA found that more than 60% of pediatricians was not confident in dealing with various ethical situations [2,14]. A study from Pakistan [1] showed that the majority of physicians has doubts on how best to handle common ethical cases. Our data showed that low confidence may reflect poor ethics education as reported by our sample, of whom only 2.5% of the residents rated the ethics education as very good/excellent. Previous reports have shown that ethics education is positively correlated with a confidence level in handling various ethical issues [14,21].

In the United States, the Accreditation Council for Graduate Medical Education (ACGME) now requires all residency programs to provide educational experiences in professionalism and principles of ethics. Despite this, however, around a half of pediatricians rated their ethics education as fair to poor [14]. Many countries have also started incorporating ethics teaching in the medical curriculum [22,23]. In spite of this, residents are still not satisfied with the ethics training they receive [20,24–27].

A number of barriers to adequate learning process of ethics during residency have been identified in the literature. These include the limitation of resources, scheduling time, the busy schedules, in addition to inadequate institutional support for ethics education [28,29].

In our study, the respondents reported limited confidence in dealing with several ethically challenging situations. However, there is a high degree of agreement among them (83.7%) that parents should be informed of errors and wrong doings should they occur. In a study of 118 pediatric residents, only 36% of them reported serious errors to patients' families. Similar results were reported from the USA. In that study, pediatric residents were found to be more likely than attending physicians to want disclosure training [30].

One study showed that while the majority of residents know that medical errors are very serious, only 40% of them said that they would disclose them [31]. The pediatric residents are more likely to report medical errors, when the errors are evident to the family or when they are of minor nature [32].

Among our group, 88.7% of the residents do not agree with physician-assisted dying [33]. Similar results were reported in other studies [34,35]. In our country, state jurisdiction and religious rules totally oppose euthanasia.

The highest confidence levels were seen in "discussing newborn screening with parents of a newborn infant" (45%), and "using opioids at the end of life" (30%), which is less than what has been

Table 3
Agreement or disagreement regarding certain ethical scenarios.[a].

Ethical scenarios	Disagree	Agree
1. A child's parents wishes must always be adhered to	55 (68.7)	25 (31.3)
2. A child's parents should be always informed of wrongdoing	13 (16.3)	67 (83.7)
3. Confidentiality of a child patient is not important	76 (95)	4 (5)
4. Doctors should do their best irrespective of patient's/parents' opinion	51 (63.7)	29 (36.3)
5. Consent only for operations – not for tests and medications	61 (76.2)	19 (23.8)
6. Close relatives should always be told about patient condition	75 (93.7)	5(6.3)
7. Children should never be treated without consent of parent	57 (71.3)	23 (28.7)
8. Doctors & nurses should refuse to treat a violent patient	77 (96.3)	3 (3.7)
9. If a patient wishes to die, he or she should be assisted in doing so	71 (88.7)	9 (11.3)
10. If patients refuse treatment due to beliefs, they should be instructed to find another doctor	51 (63.7)	29 (36.3)

[a] Data are given as number (percentage) of participants (n = 80).

Table 4
Confidence in handling different ethical situations.[a].

Situation	Not confident/a little confident	Moderately confident	Confident/extremely confident
1. Using opioids near the end of life	23 (28.7)	33 (41.3)	24 (30)
2. Discussing DNR orders with parents of a terminally ill child	42 (52.5)	31 (38.8)	7 (8.7)
3. Obtaining informed consent from adolescent patients without parental involvement	38 (47.5)	29 (36.3)	13 (16.2)
4. Deciding whether an adolescent qualifies as an emancipated minor	35 (43.7)	36 (45)	9 (11.3)
5. Deciding about the appropriateness of genetic testing	24 (30)	40 (50)	16 (20)
6. Weighing the cost of therapy in deciding treatment recommendations	35 (43.7)	33 (41.3)	12 (15)
7. Responding to offers of gifts or receiving medical information from pharmaceutical representatives	30 (37.5)	33 (41.2)	17 (21.3)
8. Weighing authors' financial relationships with study sponsors when reading reports of clinical trials	35 (43.8)	35 (43.7)	10 (12.5)
9. Deciding about withdrawing assisted ventilation	53 (66.2)	22 (27.8)	5 (6)
10. Deciding about withdrawing artificial nutrition and hydration	33 (41.2)	32 (40)	15 (18.8)
11. Requesting permission for organ donation	44 (55)	27 (33.7)	9 (11.3)
12. Deciding whether to respect an adolescent's refusal of recommended care	22 (27.5)	51 (63.7)	7 (8.8)
13. Discussing whether to attempt resuscitation for a premature infant near the margin of viability	41 (51.3)	32 (40)	7 (8.7)
14. Making decisions about life-sustaining therapies for infants with severe neurocognitive disabilities	47 (58.7)	29 (36.3)	4 (5)
15. Obtaining parents' permission to enroll a child in a clinical trial	18 (22.5)	48 (60)	14 (17.5)
16. Obtaining assent from an average 10-year-old to enroll in a clinical trial	34 (42.5)	35 (43.8)	11 (13.7)
17. Performing a blood draw on a young child for research purposes	23 (28.7)	42 (52.5)	15 (18.8)
18. Discussing newborn screening with parents of a newborn infant	11 (13.7)	33 (41.3)	36 (45)
19. Identifying the proper decision-maker for a pediatric patient	11 (13.7)	47 (58.7)	22 (27.6)
20. Delivering bad news	32 (40)	38 (47.5)	10 (12.5)
21. Deciding whether to respect an adolescent patient's request to withhold information from his or her parents	34 (42.5)	39 (48.8)	7 (8.7)

[a] Data are given as number (percentage) of participants (n = 80).

Table 5
Factors affecting the level of confidence.

Characteristics	RSQ	Measure of association (Kendal's Tau-b)	VIF	*P* value
Gender (male)	0.07	0.09	1.075	0.01 (Males not confident 8.8%; confident 35.3% Females not confident 19.6%; confident 8.7%)
Marital status	0.05	0.02	1.052	0.08
Year of residency	0.05	0.13	1.053	0.50
Religiosity	0.02	0.13	1.0203	.50
Source of ethics knowledge	0.08	0.09	1.087	.1

VIF: variance inflation factor, RSQ: R-squared.

reported previously (78.7% and 46.7%, respectively) [14]. On the other hand, the lowest confidence levels were seen in "making decisions about life-sustaining therapies for infants with severe neurocognitive disabilities" (58.7%) and "deciding about withdrawing assisted ventilation" (66.2%) that compares to (41.3% and 42%, respectively) in the other study [14].

Overall confidence levels were graded as "not confident/a little confident" in 38.5% of the residents, "moderately confident" in 42.1% of the residents and "confident/extremely confident" in 16.4% of the residents, while in another study it was found to be 6%, 38.7%, and 55.3%, respectively [14].

Among the demographic variables, sex was significantly associated with confidence; males had higher mean confidence scores than females (35.3% vs. 8.7%) ($p = 0.01$), which is consistent with another study as they found a similar result with $p = 0.02$ [14].

5. Limitations

The study was a single center study. Additional multi-center studies involving multiple residency program centers are needed to improve ethics education and handle different ethical situations in the pediatric residency program. Even though it was conducted in the largest pediatric training center in the Kingdom of Saudi Arabia with a good response rate (85.1%); the survey also relied on residents' self-reports and the data accordingly depended on their recall, social desirability, and other biases; however, the similarity of our findings with previous studies suggests generalizability of our results.

6. Conclusions

The vast majority of pediatric residents rated the ethics education as being inadequate. Only one fifth had the confidence in dealing with ethical situations, gender but not marital status, year of residency, religiosity, or source of ethics knowledge had an impact on the level of confidence in handling ethical situations in clinical practice.

There are very scarce reports on pediatric residents' ethics knowledge or outlook from a conservative Moslem country, where ethics and morality are so closely intertwined with religion in day to day actions, behavior, and outlook of individuals. To elucidate this and highlight it, we incorporated in the study a question enquiring about the self-reported degree of religiosity.

It is interesting that although Saudi culture is grounded in the Islamic religion, our findings are quite similar to that reported by papers from elsewhere lending credence to the view held by many ethicists about the existence of common mortality. Furthermore, and in the same vein, we found that the degree of religiosity did not

influence resident agreement or disagreement levels in different ethical scenarios. Similarly, the degree of religiosity did not influence the confidence in dealing with ethical challenges.

Declaration of competing interest

The authors declare that they have no competing interests.

Acknowledgements

We would like to thank all the participants of the study who generously gave their time and shared their thoughts and opinions in order to contribute to this research.

Abbreviations

KAMC King Abdulaziz Medical City

Funding

This study did not receive any fund from government or any other nonprofit organization.

Availability of data and materials

The database can be made available upon request to the corresponding author.

Authors' contributions

BHQ, AMS and AS planned and designed the study, BHQ and AMS conducted the data collection. AS conducted the data analysis and interpretation, BHQ and AMS wrote the first draft of the manuscript, AS edited the manuscript draft to its final stage. All authors have read and approved the final manuscript.

Consent for publication

Not applicable.

Ethics approval and consent to participate

The study was approved by the King Abdullah International Medical Research Center Institutional Review Board (IRB) (RC18/138/R). All participants consented to take part in the study, and responses were anonymous.

Visual abstract

Supplementary data to this article can be found online at https://doi.org/10.1016/ijpam.2020.03.009.

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