



Original article

Healthcare workers' attitudes toward laparoscopic surgery for gallbladder disease in the Caribbean



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ABSTRACT

Background: There are many well-documented obstacles to routine laparoscopy, but the contribution of healthcare workers' (HCWs') attitudes has not been examined.

Methods: A questionnaire study was performed to evaluate HCWs' attitudes toward laparoscopic cholecystectomy (LC) in operating rooms of all public hospitals in Jamaica.

Results: There were 285 HCWs interviewed from 12 hospitals across the nation. All HCWs were aware of the theoretic advantages of LC, but 56% opposed a suggestion to routinely offer LC to elective patients and 89% opposed LC for acute cholecystitis. Those in opposition were more commonly members of the nursing profession (71.8% vs 25.8%; $P < 0.0001$), older than 50 years (79.3% vs 50.2%; $P < 0.0001$), and those who graduated from their basic medical degree >20 years ago (72% vs 42.5%; $P < 0.0001$).

Although some HCWs cited valid reasons to oppose LC, some made erroneous statements such as LC was for patients who were overly concerned with esthetics (48%), LC was unsafe when a conversion was required (35%), LC compromised patient safety for esthetics (25%), LC was inferior to open surgery (21%), LC brought no advantage over open surgery (21%), and LC was harmful (20%). These beliefs are not aligned with local or international data, and they add drag to the lethargic pace of laparoscopy in Jamaica.

Conclusion: A change in HCWs' attitudes is necessary to overcome the stagnation in laparoscopic practice. We propose short-term and long-term strategies that may potentially change HCWs' attitudes. This study identified the HCW population to be targeted.

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1. Background

Although laparoscopic cholecystectomy (LC) is recognized as the gold standard operation for benign gallbladder disease, many countries in the Caribbean do not have access to laparoscopic equipment or expertise.¹ Consequently, many cholecystectomies in the Caribbean are performed via the open approach.¹

The first LC in Jamaica was performed in 1993 by Ronald Duquesnay,² but the momentum was not maintained. Laparoscopic

practice stagnated over the subsequent two decades, illustrated by reports that 23% of cholecystectomies in Jamaica were attempted laparoscopically in 2012.¹ These statistics were alarming, considering that open cholecystectomy is now rarely performed in developed countries.

In an attempt to understand the factors contributing to the underutilization of laparoscopy, we carried out a questionnaire study to evaluate healthcare workers' (HCWs) attitudes toward laparoscopic surgery for gallbladder disease. This information is important because progress in minimally invasive surgery is difficult if negative HCW attitudes exist.

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2. Methods

The local institutional review board granted permission to interview HCWs in surgical practice for this study over a period of one year. After obtaining informed consent, independent investigators interviewed HCWs who had active duties in operating rooms (ORs) across the island. The OR population was targeted because we expected them to be the most knowledgeable ones about laparoscopic surgical practice. We excluded auxiliary HCWs in the OR (e.g., janitors, porters, technicians, and secretarial staff) and those who did not wish to participate.

A questionnaire was used as the instrument to extract data for this study. The primary aims were to (1) determine HCWs' knowledge about the risks and benefits associated with LC and (2) evaluate HCWs' attitudes about routinely offering LC to patients in their hospitals. The data were recorded in an excel spreadsheet and analyzed using SPSS, version 19. Descriptive statistics were generated as appropriate.

3. Results

Over the study period, 285 HCWs were interviewed in 12 hospitals across the nation. Of the responders, there were 188 nurses and 97 doctors. This included 65 males and 220 females.

All HCWs were aware of the theoretic advantages and disadvantages of the laparoscopic approach, and 249 (87%) believed that the benefits outweighed the risks. Despite this, 160 (56%) HCWs opposed a suggestion to routinely offer their elective patients LCs. The gap widened for emergent cases, with 254 (89%) opposing LC for patients with acute cholecystitis.

The HCWs who opposed routine LC were more commonly members of the nursing profession (71.8% vs 25.8%; $P < 0.0001$), those older than 50 years (79.3% vs 50.2%; $P < 0.0001$), and those who graduated from their basic medical degree >20 years ago (72% vs 42.5%; $P < 0.0001$). Those who opposed laparoscopy were asked to explain the rationale for their opinion. Their responses are outlined in Table 1.

4. Discussion

Using cholecystectomy as a yardstick, it appears that minimally invasive surgery is not well established in this setting. There are many known contributing factors, including equipment deficiencies,³ hostile healthcare environments,^{4,5} ineffective leadership,^{6,7} and sparse expertise.¹ This study highlights another reason that laparoscopy remains an uncommon approach to operative

procedures in the Caribbean.

The HCWs' attitudes in this setting are not favorable if 56% opposed elective LC for benign gallbladder disease. That position is not in keeping with current evidence-based recommendations for elective gallbladder surgery.¹ In fact, LC has even been proven to be feasible and safe in patients with acute cholecystitis in a Cochrane systematic review that evaluated 488 patients with acute cholecystitis across 6 prospective randomized controlled trials.⁸

Perhaps the most instructive part of the survey came when HCWs were asked why they did not support the laparoscopic approach. There were some valid responses, such as concerns about cost and inadequate instrumentation. The inability for Jamaican hospitals to procure laparoscopic hardware, instruments, and consumables has already been well documented^{3–6,9} and will only be further exacerbated by global financial hardships that exist in current times.

However, there were also responses that were not supported by existing data. For example, 65% of respondents cited a lack of expertise to drive their recommendation for open surgery. This was not accurate because there were more than 10 fellowship-trained laparoscopic surgeons practicing in Jamaica when this study was carried out in 2013 and there were also reports of advanced laparoscopic operations performed in select hospitals in Jamaica.^{1,3,10–12} Although the argument could be made that expertise was not routinely available in all hospitals, there was at least one surgeon with advanced laparoscopic training practicing in each tertiary referral hospital in Jamaica at the time of this study. Although the situation was not optimal, the belief that laparoscopic expertise was unavailable during the time of the study was inaccurate.

Disappointingly, some HCWs made statements that were contrary to the wealth of knowledge that exists in medical literature. Some of the erroneous statements about LC were as follows: it was for patients who were overly concerned with esthetics (48%), it was unsafe when a conversion was required (35%), it compromised patient safety for esthetics (25%), it was inferior to open surgery (21%), it brought no advantage over open surgery (21%), and it was harmful to patients (20%). These beliefs are not aligned with local or international data,^{1–3,5,8–11,13–15} and they add drag to the lethargic pace of laparoscopy in Jamaica.

In 93% of cases, HCWs thought that elective operating time and resources would be better allocated to open cholecystectomy. This statement must be taken in context. The Jamaica healthcare delivery system struggles against many challenges that do not exist in developed countries, including chronic shortages of OR time,¹ nursing staff,³ support services,^{1,3} anesthetic ventilators,⁴ and basic monitoring equipment.⁴ Therefore, OR time is precious, and

Table 1
HCWs' rationale for opposing suggestions to offer routine laparoscopic cholecystectomies.

Laparoscopic cholecystectomy should not be offered routinely because	Elective case (160) n (%)	Emergent case (254) n (%)
The associated expense is too high	160 (100%)	254 (100%)
Operating theater time is better allocated to open surgery	149 (93%)	254 (100%)
Resources are better allocated to open surgery	149 (93%)	254 (100%)
The existing instrumentation is inadequate	144 (90%)	239 (94%)
Consumables are too expensive for the patients to procure	141 (88%)	203 (80%)
The laparoscopic approach takes too long	128 (80%)	208 (82%)
The majority of cases end up converted anyway	120 (75%)	241 (95%)
Expertise in laparoscopy does not exist locally	104 (65%)	203 (80%)
The equipment setup is laborious	88 (55%)	183 (72%)
The patients are overly concerned with esthetics	77 (48%)	229 (90%)
Conversion of a laparoscopic cholecystectomy is not safe	56 (35%)	229 (90%)
The laparoscopic approach compromises safety for esthetics	40 (25%)	229 (90%)
This approach has no advantage over open surgery	34 (21%)	241 (95%)
The laparoscopic approach is inferior to open surgery	34 (21%)	229 (90%)
The laparoscopic approach is harmful to patients	32 (20%)	216 (85%)
Complication rates are too high with laparoscopy	32 (20%)	229 (90%)

the extra time required to setup equipment and complete laparoscopic procedures may not be tolerated in this setting. Although we acknowledge that these are real issues in the developing world, we expect that there would be improvement as surgeons progress along their learning curves and the OR teams accrue experience in laparoscopy.

Although data from the region have shown a long-term cost–benefit advantage with laparoscopic surgery,^{16,17} cost was still the major concern in this study. The Jamaica government did provide free health care for all legal residents,⁶ but the level of care was so basic that functional laparoscopic hardware and consumables were unavailable in many public hospitals. The absence of hardware posed a major barrier that was not easily circumvented. Many surgeons working in the public healthcare system overcame this by making personal investments in laparoscopic hardware or by forging relationships with overseas institutions that donated retired equipment for reuse in Jamaica.¹⁵ With respect to consumables, the prevailing practice was to sterilize disposable items for reuse³ or ask patients themselves to procure any consumables needed to perform their operations laparoscopically. With this in mind, it is easy to understand why cost was such an important issue.

Overall, the current attitudes of most HCWs in Jamaica are unfavorable and, in our opinion, will hinder the development of minimally invasive surgery. Improving the status of Jamaica's surgical health care requires strategic planning. Many of the challenges in surgical health care in this setting have already been addressed: There is already a reasonable cadre of trained laparoscopic surgeons in practice in Jamaica, and recommendations to address leadership deficiencies have been outlined in this setting.⁶ Plummer et al.³ outlined a plan to overcome equipment deficiencies through public–private partnerships, collaboration with overseas facilities, and improvisation in practice methods. However, even with these factors corrected, successful introduction requires stakeholder buy-in¹⁶ because there is the potential for HCWs to raise barriers if they do not identify with the movement.

Another factor that may potentially contribute to the HCWs' attitudes may be their limited exposure to laparoscopic surgery in the local environment. It is clear that the laparoscopic revolution is still in its infancy in the Caribbean setting.^{18,19} Therefore, few cases are attempted via the laparoscopic approach only in low volumes at select institutions clustered across the nation.^{20,21} It is possible that the HCWs in the survey may have seen more complications and/or longer operating times in laparoscopic operations than in open surgery. This type of experience would negatively influence their subjective opinions of laparoscopic surgery. This could be overcome by a directed educational campaign, targeting HCWs to highlight the evidence base in favor of laparoscopic surgery⁸ as well as the good results that have already been documented locally^{9–11,15,16,20,21} and in other jurisdictions across the Caribbean region.^{12,14,17–19}

We have highlighted these deficiencies in HCWs' attitudes in the hope that they would be interpreted as constructive criticisms that would eventually bring about change. Changing the perception of minimally invasive surgery at the national level would require support from surgical leaders, policy makers, and concurrent lobbying from end users of the healthcare system.

5. Conclusions

There are unfavorable HCW' attitudes contributing to the stagnation in laparoscopic surgical practice in Jamaica. Progress in laparoscopic practice in this setting will require stakeholder buy-in and strategic planning to overcome deficiencies in equipment and

healthcare culture. This is likely similar to the situations in other developing countries.

Already known on this topic

- LC is the gold standard operation for benign gallbladder disease.
- Despite the acceptance of LC, it is still not universally available in developing countries.

What this study adds

- In addition to established limitations to laparoscopy in the Caribbean, this study demonstrates that HCWs' attitudes are also a barrier.
- The study delivers insight into the opinions of HCWs and reasons they oppose laparoscopy.
- The study outlines short-term and long-term strategies to address the problems identified.

Conflicts of interest

The authors declare that there are no conflicts of interests to disclose.

Authors' contributions

All authors contributed equally to the study design, execution of the survey, analysis of results, and approval of intellectual content.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.cmrp.2018.12.003>.

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