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Knowledge, Practices, and Barriers Related to Informed Consent Among Postgraduate Medical and Surgical Residents in Peshawar

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ABSTRACT

Informed Consent is well-established and standard protocol in clinical practice, ensuring that patients are autonomous in making decisions and know about the benefits, risks, and alternatives to the procedure. **Objectives:** To determine the knowledge, practices, and barriers of informed consent among medical and surgical postgraduate residents of the tertiary care hospitals in Peshawar, Khyber Pakhtunkhwa (KP), Pakistan. **Methods:** An analytical cross-sectional study was conducted from July 2025 to September 2025 among 294 medical and surgical postgraduate residents in public and private hospitals in Peshawar through a self-structured questionnaire, using convenience sampling, and analyzed by SPSS version 27.0. **Results:** 65% of postgraduate residents were aware of informed consent, especially legal requirements and ethical principal 92.9% and 91.8% respectively, while lower for assessing decision capacity (36.7%) and voluntariness (21.4%). Practice levels were lower than the knowledge level, despite the frequent use of standardized forms and verification of understanding. Language barriers (74.1%) and time constraints (58.5%) were key obstacles in obtaining informed consent. Knowledge and practice significantly correlated with gender, hospital, and department ($p<0.001$), but not age. Barriers showed no significant associations with department or training year. **Conclusions:** Regardless of the high knowledge of informed consent among residents, it was moderately practiced in hospitals, with a weakness in assessing decision-making and voluntariness. Language barriers and time constraints embarrass the practice of informed consent. Structured training and barrier mitigation could bridge this knowledge-practice gap and strengthen the practice of informed consent.

INTRODUCTION

Informed consent is one of the most important topics in bioethics literature, which emphasizes the patient's involvement in health decisions, embodying their opinion and viewpoints to strengthen the doctor-patient relationship. Informed Consent is well-established and standard protocol in clinical practice. [1] The concept of informed consent is more linked to a surgical specialty than to other therapeutic fields because it is mandatory to take informed consent from the patient before a surgical procedure. While the indication and necessity for obtaining consent in clinical practice are the same worldwide, the process of taking it differs from place to place [2, 3]. Many perceive informed consent as a mere medicolegal ritual rather than a fully participatory decision-making process, which is usually carried out as a short preparatory routine. Most of the respondents in a study indicated that informed

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consent feels foreign to the African psyche, yet they did not consider insistence on informed consent by doctors as constituted cultural insensitivity. While most Nigerian surgeons demonstrate understanding of the informed consent process, they often lack practical experience, highlighting the need to modernize the surgeon-patient connection [1]. Obtaining informed consent is a vital and required skill in medical training, yet many residents receive minimal formal training regarding the importance and necessity of informed consent. and [4-6]. Some senior medical students in New Zealand admitted to performing sensitive examinations on patients without their knowledge or agreement [7]. Similarly, a study conducted in the United States of America found that the lack of confidence and competence in their abilities to obtain informed consent in undergraduate and postgraduate medical students [8]. A study conducted in Cairo, Egypt, indicated that informed consent in hospitals is often treated as a formal procedure rather than a genuine connection between physician and patient [9]. Earlier research suggests that many healthcare professionals believe providing full information to the patient renders formal consent unnecessary [10, 11]. A U.S study of first-year surgical residents showed that few could accurately identify the risks, advantages, and alternatives for any of the procedures, with less than half addressing common patient queries correctly. Surgical faculty must dedicate more time to training first-year residents on the challenges involved in providing informed consent for treatments [12]. Despite many surgical residents and faculty understanding the significance of the informed consent process, they still faced persistent challenges, including inadequate communication, legal pressures, time constraints, and poor scheduling of informed consent discussions [13].

Despite high global knowledge of informed consent as a fundamental ethical requirement in medical practice, no prior studies in Peshawar, Khyber Pakhtunkhwa, Pakistan, have systemically evaluated postgraduate medical and surgical residents knowledge, real-world practices and barriers to effective implementation in tertiary care hospitals Local research elsewhere in Pakistan and nearby regions highlight discrepancies between theoretical understanding and application such as inadequate documentation, time constraints, training gaps or cultural factors yet leaves this critical group explored, potentially comprising patient safety and exposing institution to medicolegal risks. This study aimed to evaluate knowledge and practices of informed consent among medical and surgical postgraduate residents of the tertiary care hospitals in Peshawar, identify barriers to effective implementation, and provide insights to enhance training programs and improve patient care in the region.

METHODS

This analytical cross-sectional study was conducted from July to September 2025 across public and private teaching hospitals in Peshawar, Pakistan, to evaluate informed consent competency among 294 postgraduate residents in Medicine and Allied specialties and Surgery and Allied specialties. A sample size of 278 residents was calculated using OpenEpi (95% confidence level and a finite population of 1000. To account for potential incomplete responses or data loss, data were collected from 294 residents. Postgraduate trainees who consented to participate were included, while those unwilling to participate or working in the emergency department were excluded. Data were collected through a convenience sampling technique using a self-structured questionnaire with closed-ended questions(Figure 1).

Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(*N*):	1000
Hypothesized % frequency of outcome factor in the population (*p*):	50%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*):	5%
Design effect (for cluster surveys-*DEFF*):	1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	278
80%	142
90%	214
97%	321
99%	400
99.9%	521
99.99%	603

Equation

Sample size $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$

Results from OpenEpi, Version 3, open source calculator--SSPropor
Print from the browser with ctrl-P
or select text to copy and paste to other programs.

Figure 1: Sample Size Calculation Using Openepi Showing a Minimum Required Sample of 278 Participants at a 95% Confidence Level and 5% Margin of Error

The questionnaire was developed by the study authors based on a review of prior literature on informed consent among healthcare professionals [14-16]. No single existing validated instrument was fully adopted, as available tools were primarily designed for general healthcare workers or surgical patients in other regions and required adaptation to focus on postgraduate medical and surgical residents in Pakistani tertiary hospitals. The final questionnaire comprised four sections: (1) sociodemographic variables, (2) knowledge of informed consent (9 items), (3) practice related to obtaining informed consent (11 items), and (4) perceived barriers (10 items). Knowledge and practice items were scored binarily (1 point for "yes" responses indicating correct knowledge or reported good practice,0

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for negative responses), enabling computation of total scores categorized as low, moderate, or high. Item-level responses informed detailed profiles of specific components. Total scores for knowledge (9 items, maximum 9) and practice (11 items, maximum 11), and Perceived Barriers (10 items, maximum 10) were converted to percentages of the maximum possible score. Levels were categorized using widely adopted standard cut-offs in similar knowledge, attitude, and practice (KAP) studies: low (<50%), moderate (50–69%), and high (≥70%). Ethical approval was obtained from the Institutional Review Board and Ethical Committee of Alliance Healthcare Private Ltd (Northwest General Hospital & Research Centre Ethics Committee) (Ref: IRB&EC/2025-GH/0261; dated 30th June, 2025). A pilot study was conducted with 20 residents (excluded from the final analysis) at Northwest General Hospital and Research Centre, Peshawar, to assess the validity and reliability of the self-structured questionnaire. Cronbach's alpha was used to ensure internal consistency of the items. yielding α=0.80 for the overall questionnaire, indicating good reliability. Informed consent was obtained from all participants through a consent form placed at the beginning of the questionnaire, and the confidentiality of the participants was maintained. Data were collected using Google Forms and a paper-based questionnaire. Data were analysed in SPSS version 27.0. Descriptive statistics included frequencies, percentages for categorical variables, and means with standard deviation for continuous variables. Normality of age and total scores was assessed using the Shapiro-Wilk tests, which indicated non-normal distribution ($p<0.05$). Therefore, non-parametric tests were applied where appropriate. Chi-square test was used to examine the association between nominal categorical variables (gender, training hospital, training department) and ordinal outcome levels (knowledge, practices, barrier). Kruskal-Wallis tests were applied for ordinal (training year) across the three outcome levels. Mann-Whitney U tests were used for two-group comparisons (medicine vs surgery department) on ordinal outcomes. All tests were two-tailed, with $p<0.05$ considered statistically significant.

RESULTS

Among the 294 participants, the mean age was 28.78 ± 2.56 years, with 59.9% male and balanced representation across public (52%) and private (48%) hospitals, as well as medicine/allied (50%) and surgery/allied (50%) departments (Table 1).

Table 1: Sociodemographic Characteristics of the Participants (n=294)

Variables	Category	Frequency (%age)
Age	Mean ± SD	28.78 ± 2.56
Gender	Male	176 (59.9%)
	Female	118 (40.1%)
Training Hospital	Public	153 (52%)
	Private	141 (48%)
Training Department	Medicine and Allied	147 (50%)
	Surgery and Allied	147 (50%)
Training Year	First	108 (36.7%)
	Second	65 (22.1%)
	Third	68 (23.1%)
	Fourth	48 (16.3%)
	Fifth	05 (1.7%)
Formal Training in Informed Consent	Yes	160 (54.4%)
	No	134 (45.6%)

Among participants, 65.0% demonstrated high knowledge of informed consent, 29.9% moderate, and 5.1% low. In contrast, practice levels were more evenly distributed, with high 43.9% (n=129), moderate 38.1% (n=112), and low 18.0% (n=53), indicating a clear gap between higher knowledge than practice (Table 2).

Table 2: Knowledge and Practice Level and Barrier Perceived Level of Postgraduate Trainees Regarding Informed Consent

Variables	Low	Moderate	High
Knowledge level	15 (5.1%)	88 (29.9%)	191 (65.0%)
Practice level	53 (18%)	112 (38.1%)	129 (43.9%)
Barrier Perceived level	8 (2.7%)	72 (24.5%)	214 (72.8%)

Knowledge was strongest for core formal aspects, such as legal requirements and ethical principles, but substantially weaker for critical ethical principles, including the assessment of decision-making capacity and voluntariness. Similarly, most residents reported good adherence to basic procedural practices such as using standardized forms, disclosure of risk, benefit, or alternative, verification of understanding, and following institution protocol, yet considerably fewer utilized supportive tools and strategies such as visual aids, translators when needed, encouragement of patient questions, or routine involvement of family/guardians. The most common reported barriers to effective informed consent were language difficulties and time constraints for detailed discussion, followed by patient anxiety related to risk disclosure. Less frequently cited were cultural or institutional norms that minimize the consent process and are perceived as inadequate training. The results indicated that the training department was significantly associated with the knowledge of informed consent at the postgraduate residents' level ($p=0.018$), with a higher percentage of high knowledge in the medicine department

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(34.7%) compared to the surgery department (20.4%). On the other hand, the training hospital, the training year, and the formal training were not statistically significant for the knowledge levels (p>0.05). In terms of the practice domain, the results indicated that the formal training was statistically significant for the practice domain (p = 0.010), with a higher percentage for the high practice group in the formal training group (51.9%) compared to the non-formal training group (34.3%). On the other hand, the training hospital, the training department, and the training year were not statistically significant for the practice domain (p>0.05), with a higher percentage for good practice in the medicine department and the senior years (Table 3).

Table 3: Association of Knowledge and Practice Level Regarding Informed Consent Using Chi-Square Test

Variables		Categories	Low	Moderate	High	Chi-square χ^2	p-value
Knowledge	Training Hospital	Public	10 (6.5%)	101 (66%)	42 (27.5%)	0.190	0.909
		Private	11 (7.8%)	91 (64.5%)	39 (27.7%)		
	Training Department	Medicine	11 (7.5%)	85 (57.8%)	51 (34.7%)	8.013	0.018
		Surgery	10 (6.8%)	107 (72.8%)	30 (20.4%)		
	Training Year	1st	7 (6.5%)	72 (66.7%)	29 (26.9%)	10.164	0.254
		2nd	6 (9.2%)	49 (75.4%)	10 (15.4%)		
		3rd	6 (8.8%)	38 (55.9%)	24 (35.3%)		
		4th	2 (4.2%)	29 (60.4%)	17 (35.4%)		
		5th	0 (0%)	4 (80%)	1 (20%)		
	Formal Training	Yes	13 (8.1%)	102 (63.8%)	45 (28.1%)	0.646	0.724
		No	8 (6.0%)	90 (67.2%)	36 (26.9%)		
Practice	Training Hospital	Public	23 (15.0%)	56 (36.6%)	74 (48.4%)	3.23	0.198
		Private	30 (21.2%)	56 (39.8%)	55 (39%)		
	Training Department (Medicine/Surgery)	Medicine	27 (18.4%)	47 (32%)	73 (49.7%)	5.152	0.076
		Surgery	26 (17.7%)	65 (44.2%)	56 (38.1%)		
	Formal Training	Yes	25 (15.6%)	52 (32.5%)	83 (51.9%)	9.126	0.010
		No	28 (20.9%)	60 (44.8%)	46 (34.3%)		
	Training Year (1st–5th)	1st	25 (23.1%)	35 (32.4%)	48 (44.4%)	12.274	0.139
		2nd	9 (13.8%)	33 (50.8%)	23 (35.4%)		
		3rd	7 (10.3%)	29 (42.6%)	32 (47.1%)		
		4th	11 (22.9%)	14 (29.2%)	23 (47.9%)		
		5th	1 (20%)	1 (20%)	3 (60%)		

There was a significant association found between the level of Knowledge and the level of practice of informed consent. It was interesting to note that among the participants with a high level of Knowledge, 33.3% showed a low level of practice, and only 53.1% showed a high level of practice. On the other hand, among the participants with a moderate level of Knowledge, the majority showed a moderate level of practice (48.4%), and a significant number showed a low level of practice (12.0%). This shows that though the level of Knowledge among the participants is generally moderate to high, the level of practice of informed consent is still low. Among postgraduate trainees, Knowledge regarding informed consent showed a strong and highly significant relationship with perceived barriers. Trainees with greater Knowledge were noticeably more likely to experience fewer barriers in obtaining or applying informed consent, while those with low Knowledge consistently reported the highest levels of perceived barriers. This clear pattern suggests that a better understanding of informed consent principles is closely linked to feeling fewer practical, ethical, or systemic obstacles in clinical or research settings. In contrast, trainees with higher levels of practice did not show a strong reduction in perceived barriers compared to those with lower levels of practice. The correlation between the two was less direct and varied. This implies that doing the process more often does not guarantee perceiving fewer barriers (Table 4).

Table 4: Association of Knowledge and Practice Levels with Perceived Barrier Levels regarding Informed Consent among Postgraduate Residents (n=294)

Variables	Category	Low Barrier, n (%)	Moderate Barrier, n (%)	High Barrier, n (%)	Low Practice, n (%)	Moderate Practice, n (%)	High Practice, n (%)	Total, n (%)	Chi-square (df)	p-value
Knowledge	Low	0 (0%)	6 (28.6%)	15 (71.4%)	3 (14.3%)	8 (38.1%)	10 (47.6%)	21 (100%)	χ^2=40.101	<0.001
	Moderate	0 (0%)	34 (17.7%)	158 (82.3%)	23 (12.0%)	93 (48.4%)	76 (39.6%)	192 (100%)		
	High	8 (9.9%)	32 (39.5%)	41 (50.6%)	27 (33.3%)	11 (13.6%)	43 (53.1%)	81 (100%)		

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Practice Level	Low	4 (7.5%)	20 (37.7%)	29 (54.7%)	–	–	–	53	χ^2=17.708	0.001
	Moderate	2 (1.8%)	17 (15.2%)	93 (83.0%)	–	–	–	112		
	High	2 (1.6%)	35 (27.1%)	92 (71.3%)	–	–	–	129		

Overall, the results of this study have shown that knowledge of informed consent has a more powerful impact on reducing perceived barriers than simply increasing the frequency of practice alone

DISCUSSION

According to this study, postgraduate residents in Peshawar are typically informed of the legal and intellectual foundations of informed consent; however encounter it difficult to deal with some of its ethical and practical aspects. Most people (65%) had high knowledge scores overall, especially when it came to legal criteria for consent (92.9%) and ethical standards (91.8%). Conversely, fewer residents showed knowledge of voluntariness (21.4%) and decision-making capacity (36.7%), which are essential elements of true consent. Despite the extensive use of standard consent forms (82.7%) and routine validation that patients comprehended information (95.6%), only 43.9% of respondents reported consistently high-quality consent processes in practice. Time restrictions (58.5%) and language barriers (74.1%) were the most frequently encountered barriers. Our data show that a majority (65.0%) of postgraduate residents reported high knowledge of informed consent. Consistent with our findings, numerous studies reveal that medical trainees typically have a thorough understanding of consent theory despite their lack of practical experience. In the Ugandan survey, almost all senior dentistry students (>97%) showed a good level of understanding of consent principles [18]. While qualitative research in Somalia showed fairly high knowledge of informed consent [19]. In comparison, some settings report significantly less professional competence. An Ethiopian study found that around two-thirds of medical personnel had sufficient understanding of surgical informed consent [14]. In northeast India, just over half (56%) of junior physicians reported having "good knowledge" about the process for obtaining research consent [15]. Taken together, these comparisons indicate that although the general knowledge of residents is relatively high, there are still significant gaps globally, particularly in low-resource settings. Residents were particularly aware of formal consent requirements, as seen by the 92.9% recognition of legal/medico-legal requirements and the 91.8% recognition of ethical consent standards. The crucial ideas of voluntariness (21.4%) and patient decision capacity (36.7%), however, were far less well understood. This absence is concerning because obtaining valid consent necessitates not just disclosing information but also guaranteeing the patient's competence and autonomy [19]. To put it another way, our findings point to a discrepancy: practically all trainees are aware of the procedural guidelines, almost all are aware that consent must be documented, yet only a small percentage understood that consent must be provided voluntarily and properly. This is consistent with international clinical ethics recommendations that highlight capacity and voluntariness as essential components of legitimate consent [16]. The contradiction between action and knowledge is a significant problem. Although the majority of the residents in our sample were aware of consent procedures, they only indicated a moderate level of adherence in practice (43.9%). However, in an Italian survey, 71% of physicians followed consent procedures completely [20]. According to an audit, even though the majority of patients had signed consent forms, only 64% of them comprehended the information completely, and only 24% were made aware of the risks associated with surgery 76% did not receive a risk discussion [21]. Such data reveals how often the consent procedure in practice diverges from ethical principles. Similarly, another research of emergency operations in Lahore found that only 59.5% of patients felt at ease with the consent process and that almost all forms were signed by family members rather than patients (only 1.6% of patients signed themselves) [22]. In contrast, some research indicates that self-reported consent processes are substantial. Likewise, 88.8% of Anaesthetists in Tertiary Care Hospitals of Karachi who participated in a survey reported following official consent procedures, including disclosure and documentation. [23] Together, these findings imply that consistent application of consent often fails due to practical obstacles, even in cases where doctors are aware of it. Systemic pressures and communication challenges are the main barriers to appropriate consent in all contexts. Language barriers were the most frequently reported barrier in our sample (74.1%), which is consistent with earlier research on Pakistan. An Ethiopian study of healthcare professionals finds that language barriers and a lack of interaction time were specifically the two main obstacles to getting appropriate informed consent [15]. Clinicians claim that language or literacy barriers prevent clear communication and that patients' families frequently control decision-making [23]. Current results support a trend seen in recent research: while understanding of informed consent is often sufficient, systemic and practical barriers prevent its application. Crucially, ethical and educational interventions can have an impact in areas where

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knowledge and practice disagree.

The analytical cross-sectional study design limits causal inference and temporal tracking of competency changes, while convenience sampling from Peshawar hospitals risks selection bias and restricts generalizability. Complications of noncompliance with informed consent practices and patient perspectives in their health decision were not addressed. Self-reported data are susceptible to social desirability and recall bias. Patient perspectives were not included, and department-specific subgroup analyses were not performed, representing areas for future research. Residency training programs must integrate mandatory and structured education on informed consent, including decision-making capacity. Simulation training and case discussion should target the inclusion of aspects of voluntariness verification, simplification of multilingual communication, and the inclusion of the family. Hospitals should adopt standardized multilingual consent forms (in Pashto, Urdu, and English), a time and space (such as a Consent/Counselling room) dedicated to consent, especially in busy departments, and interpreters or culturally competent staff. Audits of consent practices should be encouraged, and feedback from residents should be taken regularly. This will ensure continuous improvement and patient-centred ethical practice in hospitals.

CONCLUSIONS

Our study concludes that postgraduate residents in Peshawar possess a high level of knowledge regarding informed consent. However, actual clinical implementation is lacking in high-patient-inflow hospitals. In the Pakistani tertiary care hospital, the most significant barriers to the compliance of informed consent are the language barrier, lack of time, and high patient volume. There is a requirement for structured training of postgraduate residents, consent forms in multiple languages, and assignment at the policy level for consent discussions.

Authors' Contribution

Conceptualization: MH, DA
Methodology: MH, DA, IA, AWK, SH, SZ, FW, MN
Formal analysis: MH, DA, IA, AWK, SH, SZ, FW, MN
Writing and Drafting: MH, DA, IA, AWK, SH, SZ, FW, MN
Review and Editing: MH, DA, IA, AWK, SH, SZ, FW, MN

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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REFERENCES

[1] Ogundiran TO and Adebamowo CA. Surgeons' Opinions and Practice of Informed Consent in Nigeria. Journal of Medical Ethics. 2010 Dec; 36(12): 741-745. doi: 10.1136/jme.2010.037440.

[2] Aisuodionoe-Shadrach OI, Ogunlade OS, Amoran OE. An Evaluation of the Informed Consent Process for Elective Surgery at a University Hospital. Nigerian Journal of Medicine. 2006; 15(3): 281-284. doi: 10.4314/njm.v15i3.37229.

[3] Jochum SB, Venkatramani M, Ritz EM, Favuzza J, Hayden DM, Saclarides TJ *et al.* Surgical Residents' Perspective on Informed Consent—How Does It Compare With Attending Surgeons? Journal of Surgical Research. 2021 Apr; 260: 88-94. doi: 10.1016/j.jss.2020.10.019.

[4] Hassan IN, Ibrahim M, Yaqub S, Abdalla H, Aljaili G, Osman W *et al.* Perceptions, Practices, and Barriers in Surgical Informed Consent: A Cross-Sectional Study from Sudan: Surgical Informed Consent in Sudan. Surgery in Practice and Science. 2025 Sep; 23: 100309. doi: 10.1016/j.sipas.2025.100309.

[5] Nono D, Mwebesa E, Bagenda G, Okullo I, Rwenyonyi CM, Williams S. Assessment of the Knowledge, Attitude, and Practices of the Informed Consent Process in Oral Healthcare Among Dental Students in Makerere University Dental Hospital, Uganda. BMC Medical Education. 2024 May; 24(1): 516. doi: 10.1186/s12909-024-05520-0.

[6] Loughran D. Surgical Consent: The World's Largest Chinese Whisper? A Review of Current Surgical Consent Practices. Journal of Medical Ethics. 2015 Feb; 41(2): 206-210. doi: 10.1136/medethics-2013-101931.

[7] Malpas PJ, Bagg W, Yielder J, Merry AF. Medical Students, Sensitive Examinations and Patient Consent: A Qualitative Review. The New Zealand Medical Journal (Online). 2018 Sep; 131(1482): 29-37.

[8] Tang AB, Childers CP, Dworsky JQ, Maggard-Gibbons M. Surgeon Work Captured by the National Surgical Quality Improvement Program Across Specialties. Surgery. 2020 Mar; 167(3): 550-555. doi: 10.1016/j.surg.2019.11.013.

[9] Galal YS. Knowledge, Practice, and Perception Towards the Informed Consent Process Among Physicians And Patients in General Surgical

DOI: https://doi.org/10.54393/pjhs.v7i6.3891

Departments at Cairo University Hospitals. The Egyptian Journal of Community Medicine. 2016 Apr; 34(2): 1-7. doi: 10.21608/ejcm.2016.649.

[10] Putrihamidah DA, Adhayati B, Louisa M. Physician Knowledge and Training as Determinants of Informed Consent Implementation: A Cross-Sectional Study in Two Indonesian Hospitals. Journal of Health and Nutrition Research. 2025 Dec; 4(3): 1175-1183. doi: 10.56 303/jhnresearch.v4i3.689.

[11] Paterick TJ, Carson GV, Allen MC, Paterick TE. Medical informed consent: general considerations for physicians. In Mayo Clinic Proceedings. Elsevier. 2008 Mar; 83(3): 313-319. doi: 10.4065/83.3.313.

[12] Oberoi SS, Sharma N, Rastogi S, Kumar S, Suresh A. Informed Consent: An Essential Tool for Medical Practice and Research. Amrita Journal of Medicine. 2025 Apr; 21(2): 50-56. doi: 10.4103/AMJM.AMJM_62 _24.

[13] Newman N, McKenzie F, Wells JM, Wilkinson T, Dean J, Doogue M *et al.* Consent to Medical Student Teaching: An Observational, Cross-Sectional Study Exploring the Patient View. BioMed Central Medical Education. 2024 Dec; 24(1): 1525. doi: 10.1186/s12909-024-06557-x.

[14] Bolado GN, Ataro BA, Feleke MG, Gadabo CK, Kebamo TE, Minuta WM. Informed Consent Practice and Associated Factors Among Healthcare Professionals In Public Hospitals of Southern Ethiopia, 2023: A Mixed-Method Study. Biomed Central Nursing. 2024 Jan; 23(1): 77. doi: 10.1186/s12912-024-01748-9.

[15] Rajkumari B, Devi SP, Chanu LR, Gairanlung T. Knowledge and Practices Regarding Informed Consent Process For Research Among Junior Doctors of a Tertiary-Care Institution in Northeast India: A Cross-Sectional Study. International Journal of Community Medicine and Public Health. 2025 Jul; 12(7): 3131. doi: 10.18203/2394-6040.ijcmph202521 07.

[16] Memon R, Asif M, Shah BA, Kiran T, Khoso AB, Tofique S *et al.* Clinicians' experiences of obtaining informed consent for research and treatment: a nested qualitative study from Pakistan. BioMed Central Medical Ethics. 2024 Nov; 25(1): 131. doi: 10.1186/s129 10-024-01119-8.

[17] Aweis A, Mauma M, Afrah A, Guled IA, Kulane A. Doctors' Experiences on Dealing with Informed Consent Required for Lifesaving Interventions for Pregnant Women in Somalia. Frontiers in Global Women's Health. 2025 Aug; 6: 1584113. doi: 10.3389/ fgwh.2025.1584113.

[18] Turillazzi E and Neri M. Informed Consent and Italian Physicians: Change Course or Abandon Ship—From Formal Authorization to a Culture of Sharing. Medicine, Health Care, and Philosophy. 2015 Aug; 18(3): 449-453. doi: 10.1007/s11019-015-9637-6.

[19] Shafique MU, Saleem MS, Saghir M, Javaid MS, Saad M, Sadiq A *et al.* An Audit of Preoperative Informed Consent in Surgical Patients at a Tertiary Care Hospital in Lahore, Pakistan. Cureus. 2023 Dec; 15(12): 1-6. doi: 10.7759/ cureus.50122.

[20] Munawar T, Ismail F, Qadri HM, ul Haq A, Munawar A, Zahid AS *et al.* Practices of Informed Consent for Emergency Procedures at a Tertiary Care Hospital in Lahore, Pakistan. Cureus. 2023 Dec 11;15(12): 1-8. doi: 10.7759/cureus.50322.

[21] Zewudie BT, Tenaw SG, Mesfin Y, Abebe H, Mekonnen Z, Mengist ST *et al.* Practice and Factors Affecting Informed Consent Among Healthcare Workers for Major Surgical Procedures at Gurage Zone Hospitals, South Ethiopia, 2022: a facility-based cross-sectional study. BMJ Open. 2025 Jan; 15(1): 83253. doi: 10.1136/bmjopen-2023-083253.

[22] Hassan A, Wanwari M, ur Rehman A, Aziz T, Naeem K. Application of Standard Informed Consent Procedure Amongst Practicing Anesthetists in Tertiary Care Hospitals of Karachi: Informed Consent Practices Among Anesthetists. Journal of Health and Rehabilitation Research. 2024 Sep; 4(3): 1-5. doi: 10.6191 9/jhrr. v4i3.1497.

[23] Fatima A. Informed consent process: Ethical and Practical Challenges in Clinical Trials Regarding Subject Enrollment, Protection, and Informed Consent in Developing Countries (India, Pakistan, and Iran). History and Philosophy of Medicine. 2021; 3(2): 7. doi: 10.53388/ HPM20210409029.