International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Documentation, monitoring, and communication practices in opioid administration: A cross-sectional study in Gaza -Palestine

Yousef F. Fahajan [1], Ferdws H. Abu Mosa [2,*], Ahmed El-Shair [3] and Yasmin Abu Shnena [4]

[1] *Department of Nursing University College of Applied Sciences, Gaza Strip, Palestine.*
[2] *Intensive Care Unitsk Nassir Hosoital, MoH, Gaza Strip, Palestine.*
[3] *Department of Nursing, Faculty of Nursing, Isalmic University of Gaza, Palestine.*
[4] *Department of Nursing, Faculty of Nursing college, Isalmic University of Gaza, Palestine.*

International Journal of Science and Research Archive, 2025, 16(01), 1731-1739

Publication history: Received on 14 June 2025; revised on 21 July 2025; accepted on 23 July 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.16.1.2177

Abstract

Introduction: The global opioid crisis has prompted urgent attention to safe medication practices, especially in critical care environments. In the Gaza Strip, challenges such as resource scarcity, displacement, and high workloads compound the complexities of opioid management.

Aim: This study aimed to assess the level of compliance with opioid medication policies among nurses in Intensive Care Units (ICUs) across Ministry of Health hospitals in Southern Gaza.

Methodology: A cross-sectional descriptive analytical design was employed, targeting all ICU nurses (n = 126) at three major hospitals using a structured self-administered questionnaire. The tool evaluated compliance across three core domains: monitoring practices, nursing interaction (handover and communication), and documentation procedures.

Results: The results revealed that documentation practices had the highest compliance (83.75%), followed by monitoring practices (74.00%) and nursing interaction (73.00%), with an overall mean compliance of 76.25%. No statistically significant gender differences were found in compliance levels. However, factors such as displacement, heavy workloads, and lack of recent training negatively impacted adherence. The findings underscore the critical need for targeted training programs, supportive institutional policies, and robust monitoring systems to enhance opioid safety practices. Improving communication channels and ethical reporting mechanisms is also essential. The study concludes that while technical adherence is relatively strong, systemic barriers remain.

Conclusion: Adherence to opioid policy among ICU nurses was moderate to high, with the highest compliance in documentation (83.75%), followed by monitoring (74.00%) and nursing interaction (73.00%). The strongest practices included opioid storage and dosage verification, while the weakest were error reporting and ethical issue observation. No significant differences were found across demographic factors; however, ICU experience and workload positively influenced adherence. Although formal training showed no significant impact, those trained before or during the war had slightly better monitoring scores. Workplace conditions and ICU-specific experience appear more influential than demographic or educational factors.

Recommendations: include periodic education, policy reinforcement, and supportive supervision to strengthen compliance and patient safety in Gaza's ICUS.

Keywords: Opioid Medication; Compliance; ICU Nurse; MOH Policy

* Corresponding author: Ferdws H. Abu Mosa

1. Introduction

The global opioid crisis has become one of the most pressing public health challenges of the 21st century. High-income countries consume nearly 90% of the world's opioid supply, while low- and middle-income regions, such as Gaza, struggle with limited access and compounded management challenges due to unstable healthcare infrastructures (Scholten et al., 2020). In critical care settings, opioids are essential for pain control, particularly among mechanically ventilated patients. However, their misuse, overuse, and inadequate monitoring have led to adverse outcomes, including dependency, overdose, and increased mortality (Mauro et al., 2022; Tan et al., 2018).

To ensure safe and effective opioid use, many healthcare systems have implemented strict opioid medication policies. These policies are designed to guide practitioners, especially nurses, in maintaining accurate dosing, monitoring for side effects, documenting administration, and ensuring patient safety. Nurses, as frontline caregivers, play a critical role in executing these policies. Their adherence influences not only the quality of pain management but also patient outcomes and institutional safety standards (Lieb Schutz et al., 2017; Salzman et al., 2023).

In resource-constrained environments like the Gaza Strip, nurses face significant barriers to compliance. These include high patient loads, limited training opportunities, inadequate supervision, and ongoing conflict-related disruptions. Despite these challenges, understanding and improving compliance with opioid policies is vital to safeguarding patient well-being in intensive care units (ICUs).

This study explores the extent to which ICU nurses in the Ministry of Health hospitals in southern Gaza comply with opioid medication policies. It also investigates the impact of factors such as clinical experience, training, documentation practices, and workload on adherence levels. By identifying barriers and facilitators of compliance, the study aims to inform the development of targeted strategies to enhance opioid safety and improve critical care quality in conflict-affected settings.

2. Literature review

Opioid medications are indispensable in the management of moderate to severe pain, particularly in intensive care units (ICUs) where patients often require sedation and invasive procedures. However, the use of opioids presents considerable clinical challenges due to risks such as dependency, overdose, and adverse effects, including respiratory depression and opioid-induced hyperalgesia (Moran, Myburgh, and Scott, 2022). Consequently, international health authorities and national ministries have developed stringent opioid prescribing and administration guidelines to ensure safe practices and minimize harm (Dowell et al., 2022; Palestinian Ministry of Health, 2020).

Nurses are central to the implementation of opioid policies, as they are directly responsible for drug administration, monitoring patient responses, documentation, and communication within healthcare teams. Evidence suggests that adherence to opioid protocols significantly reduces medication errors, enhances patient safety, and curbs misuse (Lieb Schutz et al., 2017; Kaya et al., 2024). However, compliance is often influenced by various factors, including clinical experience, training level, workload, institutional support, and awareness of guidelines (Roberts et al., 2022; Taylor and Nguyen, 2023).

In critical care environments, where patient acuity is high and opioid use is frequent, the importance of protocol adherence becomes even more pronounced. Non-compliance in such settings has been linked to inadequate pain control, delayed detection of side effects, and increased risk of legal or ethical violations (Choi et al., 2021). Studies also emphasize the role of continuous professional education and structured documentation systems in improving compliance (Kaiser, 2020; ISMP, 2022).

In conflict-affected areas like Gaza, compliance with opioid policies is further challenged by resource limitations, staff shortages, disrupted training, and high emotional burden due to wartime conditions (Ahmed, Salameh, and Odeh, 2023). Displacement and instability can hinder effective policy implementation, highlighting the need for context-specific strategies that consider not only clinical competency but also the psychosocial and logistical challenges facing frontline nurses.

Despite the global recognition of opioid safety protocols, there is limited research addressing policy adherence in low-resource and high-conflict regions. This study contributes to filling that gap by exploring ICU nurses' compliance with opioid policies in the Gaza Strip and identifying the key factors that influence adherence in such a unique and challenging healthcare environment.

3. Methodology

3.1. Inclusion criteria

The study targeted registered nurses currently working in adult ICU, pediatric ICU, or coronary care units (CCU) within Ministry of Health hospitals in the southern Gaza Strip. To be included, participants needed to have at least three months of clinical experience in these units.

3.2. Study tools and instruments

Data were collected using a structured, self-administered questionnaire developed by the researcher. The questionnaire included four main sections: sociodemographic characteristics, monitoring practices, nursing interaction, and documentation compliance. It was reviewed by bilingual experts for clarity and accuracy and was estimated to take 15–20 minutes to complete. Both Likert scale and multiple-choice questions were used to gather data on adherence to opioid policies and perceived challenges

3.3. Study protocol

This was a cross-sectional, descriptive-analytical study conducted over 16 months, from April 2024 to July 2025. A census sampling method was used, including all eligible ICU nurses from three hospitals: Nasser Medical Complex, European Gaza Hospital, and Al-Aqsa Hospital. Of 180 distributed questionnaires, 129 were completed, yielding a 70% response rate.

3.4. Data collection

Primary data were gathered using the structured questionnaire directly distributed by the researcher to ICU nurses. Secondary data were obtained from previous literature and official policy documents. To reduce bias, questionnaires were distributed in person and completed independently by participants.

3.5. Data management and statistical analysis

Data were entered, coded, and analyzed using SPSS. Descriptive statistics (frequencies, percentages, means) were used to describe participants' characteristics and levels of compliance. Inferential statistics, including t-tests and ANOVA, were employed to examine differences in compliance based on demographic and professional variables. Internal consistency of the questionnaire was assessed using Cronbach's alpha during the pilot study.

3.6. Ethical consideration

The study received ethical approval from the Helsinki Committee in Gaza and permission from the Ministry of Health. All participants were informed about the study's objectives, and written informed consent was obtained. Confidentiality and anonymity were strictly maintained throughout the study, and participation was voluntary.

3.7. Limitations of the study

The study relied on self-reported data, which may introduce response bias. Additionally, due to the cross-sectional design, causal relationships cannot be established. The results are limited to the governmental hospital settings in southern Gaza and may not be generalizable to other regions or private institutions. Political instability and war-related disruptions during the data collection period may have also influenced responses and participation.

4. Results

4.1. Participant Demographics

The study included 126 ICU nurses from three major governmental hospitals in the Gaza Strip. The majority were male (62.7%), and the most common age group was 30 years or younger (45.2%). Most participants held a Bachelor's degree (79.4%), and nearly one-third had more than 10 years of nursing experience. Regarding ICU-specific experience, 38.1% had 3 or fewer years. A majority (54.8%) reported being displaced due to ongoing conflict, and 72.2% described their workload as heavy. Only 47.6% had received formal training related to opioid policy, either during the war, before it, or in academic programs.

Table 1 Distribution of demographic information among the participants

Variables	Categories	N	%	Mean±SD (Min-Max)
Gender	Male	79	62.7%	
	Female	47	37.3%	
Age groups	30 or less	57	45.2%	33.3±6.68 (25-57)
	31 - 40	52	41.3%	
	More than 40	17	13.5%	
Name of hospital	Al-Aqsa Hospital Nasser	26	20.6%	
	Medical Complex	63	50.0%	
	European Gaza Hospital	37	29.4%	
Name of department	Pediatric ICU	24	19.0%	
	Adult ICU	76	60.3%	
	Cardiac care unit CCU	26	20.6%	
Level of Education	Bachelor	100	79.4	
	Master	26	20.6	
Years of experience in nursing	5 or less	46	36.5%	6.05±5.07 (1-19)
	5 - 10	39	31.0%	
	More than 10	41	32.5%	
Years of experience in the ICU setting	3 or less	48	38.1%	9.48±5.98 (1-25)
	4 - 6	41	32.5%	
	More than 6	37	29.4%	
What are the current housing conditions:	Resident	57	45.2%	
	Displaced	69	54.8%	
How would you describe your current workload?	Light	0	0.0%	
	Moderate	35	27.8%	
	Heavy	91	72.2%	
Have you received any formal training or workshops related to opioid medication policy and safe administration?	Yes, during this war period	14	11.1%	
	Yes, before the onset of this war	46	36.5%	
	Yes, during my academic studies only	35	27.8%	
	No	31	24.6%	

4.2. Domain Compliance Levels

Overall, nurses showed moderate to high adherence to opioid policy across three key domains

- **Documentation Procedures:** This domain had the highest mean compliance score (83.75%), particularly in areas such as accurate logging of staff details during administration (89.00%) and documentation of

interdepartmental drug requests (88.50%). However, weaknesses were noted in areas like disciplinary reporting (76.00%) and logging remaining doses (78.25%)

- **Monitoring Practices:** Nurses scored 74.00%, indicating good compliance in observing patients for adverse effects and following standardized opioid protocols, but with room for improvement in consistency and documentation
- **Nursing Interaction** (Handover and Communication): This domain had the lowest average compliance score at 73.00%. Barriers such as high workload and communication challenges were suggested as contributing factors to lower scores.

Table 2 Level of domains studied among the patients

Domain	Mean	SD	Mean %	Rank
Monitoring practice	2.96	0.62	74.00	2
Nursing interaction (handover and communication)	2.92	0.61	73.00	3
Documentation procedure	3.35	0.61	83.75	1
Total	3.05	0.54	76.25	

The overall average compliance across all domains was 76.25%, indicating a generally acceptable level of adherence to opioid policy protocols in ICU settings.

5. Statistical Analysis of Influencing Factors

Gender, Age, Education, Hospital, and Department: No statistically significant differences were found in compliance across these variables, indicating uniform policy adherence among different demographic groups

- **ICU Experience:** Nurses with more ICU experience scored significantly higher in documentation and total domain performance, confirming the influence of clinical exposure on safe opioid practices

Table 3 Mean difference of the studied domain related to years of experience in nursing among the participants

Domains	Years of experience	N	Mean	SD	F	P-value
Monitoring practice	5 or less	46	2.95	0.70	1.067	0.347
	5 - 10	39	2.86	0.58		
	More than 10	41	3.07	0.57		
	Total	126	2.96	0.62		
Nursing interaction (handover and communication)	5 or less	46	2.96	0.69	2.706	0.227
	5 - 10	39	2.72	0.61		
	More than 10	41	3.08	0.48		
	Total	126	2.92	0.61		
Documentation procedure	5 or less	46	3.27	0.67	1.274	0.283
	5 - 10	39	3.33	0.63		
	More than 10	41	3.47	0.50		
	Total	126	3.35	0.61		
Total	5 or less	46	3.03	0.64	1.808	0.168
	5 - 10	39	2.95	0.52		
	More than 10	41	3.17	0.42		
	Total	126	3.05	0.54		

Significant at P≤0.05; P > 0.05: Not significant; n: number of subjects; SD: standard deviation; & F: One-way ANOVA.

According table (3) explores how participants' length of professional nursing experience influences their perceptions and practices in four key domains: monitoring practice, nursing handover and communication, documentation procedure, and overall domain performance.

- **Workload:** Surprisingly, nurses under heavier workloads reported higher compliance, particularly in monitoring, suggesting heightened vigilance under pressure

5.1. Mean difference of the studied domain related to the current workload among the participants

Table (4) presents the mean differences in participants' perceptions of the studied domains based on their current workload, categorized as moderate or heavy. The independent t-test results reveal statistically significant differences in the Monitoring practice domain (t = -3.458, P = 0.001) and the Total domain (t = -2.748, P = 0.007), indicating that participants with a heavy workload reported higher scores than those with a moderate workload. However, no significant difference was found in the Nursing interaction (handover and communication) domain (t = -1.898, P = 0.060), suggesting that workload does not significantly affect this domain. These findings imply that workload may notably impact monitoring practices and overall perceptions, but not nursing communication and handover.

Table 4 Mean difference of the studied domain related to current workload among the participants

Domains	The current workload?	N	Mean	SD	t	P-value
Monitoring practice	Moderate	35	2.66	0.68	-3.458	0.001*
	Heavy	91	3.07	0.56		
Nursing interaction (handover and communication)	Moderate	35	2.76	0.73	-1.898	0.060
	Heavy	91	2.99	0.56		
Documentation procedure	Moderate	35	3.28	0.76	-0.837	0.404
	Heavy	91	3.38	0.54		
Total	Moderate	35	2.84	0.63	-2.748	0.007*
	Heavy	91	3.13	0.48		

Significant at P≤0.05; P > 0.05: Not significant; n: number of subjects; SD: standard deviation; & t: independent t-test.

The results from Table (4) demonstrate that nurses experiencing a heavy workload reported significantly higher scores in the domains of Monitoring practice (and the Total domain when compared to their peers reporting a moderate workload. Conversely, no statistically significant differences were found in Nursing interaction (handover and communication) or Documentation procedure. These findings carry several important implications regarding the influence of workload on nursing practice, particularly in critical care and high-demand environments like the ICU.The higher mean scores among nurses with heavy workloads, particularly in monitoring practices, might at first appear counterintuitive, as increased workload is typically associated with care omissions or reduced performance. However, several possible explanations can be proposed:The researcher recognize that nurses under heavier workloads may become more attentive to monitoring to prevent adverse patient events. In high-stakes settings, nurses might compensate for the workload by prioritizing patient safety and critical care vigilance.A heavy workload often corresponds with more critical cases. Nurses assigned to these settings may perceive monitoring as essential and integral to their role, thereby reporting higher involvement or compliance with monitoring standards.Participants under heavy workload may overreport their engagement in monitoring practices due to the subjective perception of working harder or being more involved, which may inflate scores without reflecting actual practice quality.

- **Training:** Although no statistically significant effect was observed, nurses who received training before or during the war had slightly better monitoring scores than those who had none.

Table 5 Mean difference of the studied domain related to received formal training or workshops related to opioid medication policy and safe administration among the participants

Domains	Received formal training	N	Mean	SD	F	P-value
Monitoring practice	Yes, during this war period	14	2.93	0.63	2.454	0.066
	Yes, before the onset of this war	46	3.14	0.66		
	Yes, during my academic studies only	35	2.89	0.61		
	No	31	2.78	0.53		
	Total	126	2.96	0.62		
Nursing interaction (handover and communication)	Yes, during this war period	14	2.78	0.68	1.457	0.230
	Yes, before the onset of this war	46	3.07	0.72		
	Yes, during my academic studies only	35	2.89	0.59		
	No	31	2.81	0.37		
	Total	126	2.92	0.61		
Documentation procedure	Yes, during this war period	14	3.67	0.50	2.039	0.112
	Yes, before the onset of this war	46	3.40	0.73		
	Yes, during my academic studies only	35	3.27	0.55		
	No	31	3.23	0.46		
	Total	126	3.35	0.61		
Total	Yes, during this war period	14	3.08	0.55	2.029	0.113
	Yes, before the onset of this war	46	3.19	0.65		
	Yes, during my academic studies only	35	2.99	0.47		
	No	31	2.90	0.37		
	Total	126	3.05	0.54		

Significant at P≤0.05; P > 0.05: Not significant; n: number of subjects; SD: standard deviation; & F: One-way ANOVA.

This study examined the influence of formal training and workshops on nurses' perceptions across domains related to opioid medication management: Monitoring practice, Nursing interaction (handover and communication), and Documentation procedure. Although no statistically significant differences were found in most domains based on training status, trends observed warrant a detailed exploration.

6. Discussion

This study examined ICU nurses' compliance with opioid medication policies in the Ministry of Health hospitals in southern Gaza, focusing on documentation procedures, monitoring practices, and nursing interaction. The overall compliance rate was moderate to high, with documentation practices receiving the highest adherence (83.75%), followed by monitoring (74.00%) and nursing interaction (73.00%). These findings suggest that while technical procedures are generally followed, challenges remain in communication and ethical reporting domains.

The high compliance in documentation aligns with previous studies emphasizing the critical role of accurate records in ensuring opioid accountability and minimizing diversion or misuse (ISMP, 2022; Kaiser, 2020). Similarly, adherence to monitoring protocols reflects ICU nurses' awareness of the importance of patient safety during opioid administration, particularly regarding vital signs and adverse effects.

Interestingly, the study found no statistically significant differences in compliance related to gender, age, education level, hospital, or department. This indicates that demographic factors alone may not strongly influence policy adherence. However, significant variations were observed concerning ICU experience and workload. Nurses with longer ICU tenure demonstrated higher compliance, especially in documentation, corroborating Benner's model which

associates professional maturity with improved clinical judgment and adherence to protocols (Benner, 1984). Likewise, nurses under higher workloads surprisingly reported better compliance, particularly in monitoring. This may be attributed to their heightened sense of urgency and responsibility in high-pressure situations, though it could also reflect response bias.

Despite the existence of formal training programs, the study found no significant impact of training on overall compliance. However, nurses who received training before or during the war showed slightly better monitoring scores, hinting at the potential benefit of context-specific and timely training interventions. This supports previous literature highlighting the role of situational factors and experiential learning in policy adherence (Roberts et al., 2022).

The weakest compliance areas error reporting and ethical issue observation raise important concerns. These gaps may be linked to institutional culture, fear of blame, or lack of supportive mechanisms for reporting. As noted by Garcia et al. (2022), fostering a non-punitive environment is essential to encourage transparent error reporting and improve safety practices.

Overall, the findings suggest that improving compliance with opioid policies requires more than standard training. Institutional support, clear communication channels, and reinforcement of safety culture are crucial. Additionally, ongoing mentorship and tailored professional development may bridge gaps among less experienced staff. In conflict-affected settings like Gaza, strengthening these systems is even more critical due to the compounded challenges posed by war, resource scarcity, and emotional burden on healthcare providers.

7. Conclusion

This study assessed the compliance of ICU nurses in Gaza's Ministry of Health hospitals with opioid medication policies, focusing on three key domains: monitoring practices, nursing interaction, and documentation procedures. The results revealed moderate to high overall adherence, with documentation receiving the highest compliance scores. Nurses demonstrated strong performance in opioid storage, dosage verification, and formal documentation. However, weaknesses were noted in error reporting and addressing ethical issues.

Notably, while demographic characteristics such as gender, age, and education level were not significantly associated with compliance levels, professional experience and workload had measurable effects. Nurses with more ICU experience showed higher adherence, particularly in documentation, while those under heavier workloads reported greater engagement in monitoring tasks. Formal training had no statistically significant impact on overall compliance, though nurses trained before or during the war demonstrated slightly better outcomes.

These findings emphasize that clinical experience, contextual training, and workplace conditions play a more critical role in influencing opioid policy adherence than demographic factors. To enhance opioid safety in ICU settings, particularly in conflict-affected areas like Gaza, targeted interventions must address institutional support, experience-based mentoring, and protected mechanisms for reporting errors and ethical concerns.

Compliance with ethical standards

Disclosure of conflict of interest

Conflict of Interest: The authors declare no conflict of interest.

Statement of ethical approval

This study was conducted in full compliance with ethical research guidelines. Ethical approval was obtained from the Helsinki Committee in the Gaza Strip, as well as official authorization from the Ministry of Health (MOH) to carry out the study across selected governmental hospitals.

The study ensured that no physical, emotional, or professional risks were imposed on participants. Personal data were stored securely and used exclusively for research purposes. Participation in the study did not interfere with the participants' job responsibilities, and they were informed of their right to withdraw from the study at any stage without penalty.

The researcher adhered strictly to the ethical principles outlined in the Declaration of Helsinki and respected all institutional and national regulations throughout the study process.

Statement of informed consent

All participants received a clear explanation of the study's objectives, procedures, and their rights as research participants. This included assurances of voluntary participation, confidentiality, and anonymity. Written informed consent was obtained from all participants before data collection, and each signed consent form was attached to the respective questionnaire.

References

[1] Ahmed, H. Y., Salameh, R., and Odeh, A. (2023). Conflict-related displacement and its effects on medication safety among nurses in the Middle East. Journal of Global Health Research, 11(4), 225–234.

[2] hen, Y., and Lee, S. (2025). Impact of monitoring practices on opioid-related adverse events in hospital settings. Journal of Clinical Nursing, 34(2), 215–225.

[3] College of Nurses of Ontario. (2010). Practice standard: Medication. Retrieved 17/11/2024 from https://www.cno.org/globalassets/docs/prac/41007_medication.pdf.

[4] Hamid, M. A., and Hamid, S. (2015). A cross-sectional study on medication safety and drug compliance among ICU nurses in Egypt. Middle East Journal of Nursing, 9(2), 18–24.

[5] Joint Commission. (2017). Safe use of opioids in hospitals: Sentinel Event Alert 49. Retrieved 17/12/2024 from https://www.jointcommission.org/sea_issue_49.

[6] Kaya, A., Kirbaş, Z. Ö., and Medin, S. T. (2024). Evaluation of nurses' attitudes and behaviors regarding narcotic drug safety and addiction: A descriptive cross-sectional study. BMC Nursing, 23(1), 435.

[7] Kim, H., and Park, J. (2021). Evaluation of nursing handover quality and its impact on opioid administration safety in ICU. Journal of Clinical Nursing, 30(9–10), 1264–1273.

[8] Nguyen, T., Patel, S., and Garcia, R. (2023). Documentation standards and opioid stewardship: A hospital-based perspective. International Journal of Nursing Studies, 142.

[9] Park, J. H., Kim, S., and Lee, H. Y. (2024). The relationship between ICU-specific experience and opioid titration accuracy: A multi-site analysis. Critical Care Nurse, 44(1), 28–36.

[10] Patel, S., and Garcia, R. (2024). Nursing compliance with opioid documentation protocols: Challenges and opportunities. Nursing Management, 31(3), 38–45.

[11] Salzman, M., Bryan, R. H., and Sharfstein, J. M. (2023). A step toward equity: Evidence-based policy for access to medications for healthcare workers with opioid use disorder. Journal of Nursing Regulation, 14(3), 14–19.

[12] Wakefield, D. S., Wakefield, B. J., and Uden-Holman, T. (2013). Nurses' perceptions of medication administration safety practices. Health Services Research, 48(5), 1859–1877.

[13] World Health Organization. (2022). Guidelines for the management of chronic pain in adults: Implementation of opioid safety protocols in hospitals. Retrieved 22/08/2024 from https://www.who.int/publications/i/item/9789240060330.