

ORIGINAL ARTICLE

Does Maternal Danger-Sign Literacy Independently Predict Timely Formal Care for Childhood Illnesses? A Cross-Sectional Study from Larkana, Pakistan

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Abstract

Background:

Childhood illness remains a leading cause of under-five mortality in Pakistan, especially in underserved districts like Larkana. Delays in recognizing danger signs and seeking timely formal care can be fatal. This study examines whether maternal literacy of danger signs of childhood illness independently predicts timely formal healthcare-seeking behavior.

Methods

From January to April 2021, five major hospitals in Larkana, Pakistan, participated in a cross-sectional survey. A standardised questionnaire measuring sociodemographics, awareness of WHO-recognized childhood danger signals, and care-seeking behaviours was used to interview 390 mothers of children aged under five. Seeking treatment from a qualified professional within 24 hours of the commencement of an illness was considered timely formal care. After controlling for education, income, and distance, logistic regression analysis evaluated the association between mother literacy and prompt care.

Results

Only 34.1% of mothers correctly identified at least 3 out of 5 key danger signs. Timely care-seeking was reported in 42.5% of cases. Mothers with high danger-sign literacy had significantly higher odds of timely care-seeking (aOR: 2.26; 95% CI: 1.44–3.57; $p < 0.001$), independent of maternal education or household income.

Conclusions

Maternal literacy of danger signs is a strong, independent predictor of timely formal care for child illness. Integrating danger-sign training into maternal health programs could directly address Delay 1 in care-seeking and reduce child mortality in high-risk settings.

Keywords

Maternal literacy, danger signs, timely care, child illness, delay model, Pakistan

Abstracts in [عربي](#), [اردو](#), [中国人](#), [française](#), [русский](#) and [español](#) at the end of the article

Layman Summary

In Pakistan's Larkana district, many children die simply because their mothers are unaware of when an illness becomes dangerous. This study interviewed 390 mothers to find out whether recognizing warning signs—such as a child not being able to eat, having high fever, or breathing fast—helps them seek medical help quickly. Shockingly, less than half of the mothers could name even three signs that should worry them. And just 4 in 10 children were taken to a trained doctor or nurse within a day of getting sick. The mothers who did know these warning signs were more than twice as likely to seek help quickly—even when they lived far from hospitals or had little money. This means that teaching mothers about danger signs could save lives. Hospitals, community health workers, and education programs should focus on making mothers more aware of when their child's illness needs immediate attention. By doing so, we can prevent delays that cost lives and move closer to ensuring all children get the right care at the right time.

INTRODUCTION

In low- and middle-income countries (LMICs), childhood diseases continue to be the primary cause of death for children under five, especially in areas with poor access to prompt and quality healthcare [1]. Approximately 5 million children under the age of five died worldwide in 2020, with preventable infectious illnesses such as malaria, pneumonia, and diarrhoea being the main causes, according to the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) [2]. Delays in seeking care, particularly during the early, crucial window of illness progression, are responsible for a considerable percentage of these deaths in addition to the severity of the illness [3].

Pakistan continues to record concerning high under-five death rates, even though it has made significant progress in maternal and child health indices [4]. The under-five mortality rate is still more than 60 fatalities per 1,000 live births, according to the Pakistan Demographic and Health Survey (PDHS) 2017–18 [5]. Low health literacy, sociocultural obstacles, and infrastructure deficiencies increase the risk in provinces like Sindh, especially in underprivileged regions like Larkana. In these situations, the "three delays" model—which was first developed to explain maternal mortality—has been used more and more in relation to child health [6]. Delay 1 is frequently the most disregarded and least addressed, referring to the delay in identifying danger signs and choosing to seek medical attention [7, 8].

One of the most important factors influencing prompt care-seeking is the mother's ability to recognise danger signs in sick children. Inability to feed, lethargy, seizures, high fever, rapid breathing, and continuous vomiting are among the major clinical indicators that the World Health Organisation (WHO) defines as indicating serious sickness in young children [9, 10]. Early detection of these symptoms increases the likelihood that women will seek official medical attention, lowering the risk of avoidable complications or death [11, 12]. Nonetheless, data from LMICs regularly demonstrates that mothers are not well-informed about these warning indicators, particularly in rural or underserved regions [13, 14].

Previous studies in Pakistan have largely focused on access barriers to care, such as transport, cost, and facility readiness, with limited attention paid to the foundational issue of maternal knowledge [15, 16]. Even fewer studies have evaluated whether this knowledge translates into actionable behavior—such as timely presentation to formal healthcare facilities [17]. Furthermore, maternal health literacy is often conflated with formal education, when in fact specific clinical knowledge, like danger-sign recognition, may be acquired through community health workers, personal experience, or mass media [18, 19].

Larkana district in northern Sindh offers a poignant case for such an investigation. With one of the highest poverty indices in the province, limited female literacy, and long distances to tertiary care centers, the district represents a microcosm of structural and knowledge-based barriers to child health [20, 21]. Yet, it is also home to several ongoing community health initiatives, including the Lady Health Worker (LHW) program, which could serve as a platform for maternal education.

This study, therefore, aims to examine whether maternal literacy of WHO-recognized child danger signs is independently associated with timely care-seeking—defined as seeking care from a trained provider within 24 hours of illness onset. By isolating this behavioral determinant and adjusting for socio-economic and geographic factors, we aim to understand the true impact of maternal knowledge on child health outcomes. Our findings will not only contribute to the literature on delay models in child healthcare but will also inform targeted interventions, such as health education campaigns and capacity-building of community health workers, that can empower mothers to act decisively in moments of pediatric crisis.

In an era where child survival is increasingly linked to responsive and informed caregiving, understanding the link between what

mothers know and how they act is crucial. By addressing Delay 1 through a lens of maternal danger-sign literacy, this study hopes to offer actionable insights for reducing preventable child deaths in Pakistan and similar resource-limited settings.

MATERIALS AND METHODS

Study Design and Study Setting

This was a community-based cross-sectional study conducted in Larkana District, Sindh Province, Pakistan, between January and April 2021. Larkana is one of Pakistan's underdeveloped districts, with significant disparities in maternal literacy and child health outcomes. The study was carried out across five major healthcare facilities (three public and two private) that provide outpatient services for under-five children. These facilities were selected to capture a broad socio-economic range of patients and care-seeking patterns.

Study Population

The target population comprised mothers (primary caregivers) of children under the age of five who presented to the outpatient department (OPD) of participating healthcare facilities during the study period. Inclusion criteria were:

- Biological mothers aged ≥ 18 years
- Child under 5 years of age presenting with illness
- Resident of Larkana district
- Willingness to provide informed consent

Mothers of children presenting with trauma, those who were critically ill, or those who refused consent were excluded.

Sample Size Estimation

Using OpenEpi (version 3.01), the sample size was determined under the presumption that 50% of mothers would be sufficiently knowledgeable about danger signs (maximum variability), with a 95% degree of confidence and a 5% level of absolute precision

$$n = \frac{Z^2 \times p \times (1 - p)}{d^2} = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.05)^2} = 384$$

The total sample size was determined to be 390 mothers after adjusting for a 5% non-response rate.

Sampling Technique

A non-probability consecutive sampling method was used. Every eligible and consenting mother presenting to the selected healthcare facilities during the study period was invited to participate until the target sample size was achieved.

Biases and Confounders

Potential biases included recall bias in reporting timing of care-seeking and danger-sign recognition, and social desirability bias during interviews. To minimize these:

- Standardized interview protocols were used
- Recall periods were limited to the most recent child illness episode within the past month
- Interviewers were trained to maintain neutrality

To address confounding, multivariable logistic regression was employed to adjust for maternal education, income, distance to facility, child age, and sex.

Data Collection Tool

Twenty mothers who were not part of the study sample participated in a pilot trial using a structured questionnaire which was pre-tested before the actual data collection. The tool was developed in Urdu language. It included sections on:

- Socio-demographic characteristics
- Knowledge of WHO-recognized danger signs (≥ 3 correct responses = adequate literacy)
- Recent child illness episode and care-seeking timeline
- Distance, transport, and cost of accessing care

Data Collection Methodology

Trained female research assistants conducted in-person interviews to gather data. Interviews took place in a private area within each facility to ensure confidentiality. Each interview lasted approximately 20–25 minutes.

Quality Control Measures

- Interviewers received two-day training on questionnaire administration
- Daily field monitoring was conducted by supervisors
- 10% of responses were randomly cross-verified through phone follow-ups
- Data entry was double-checked by two independent data operators
- Analysis was cross-validated by a second biostatistician

Data Analysis

Data Preparation

Raw data were exported from Excel to SPSS version 26.0. Variables were coded, labelled, and formatted for analysis. Composite scores were calculated (e.g., danger-sign literacy: 0–5 scale).

Data Cleaning

- Missing values were assessed; entries with >20% missing data were excluded (n = 3)
- Outliers were identified using boxplots and Z-scores for continuous variables
- Inconsistent entries (e.g., negative travel time) were flagged and corrected through audit

Data Transformation

- Continuous variables (e.g., travel time) were normalised where needed using log transformation
- Literacy scores were dichotomised for regression analysis (adequate: ≥3 signs known)

Data Modeling

After adjusting for potential confounders (education, income, distance, and child's age/sex), a binary logistic regression model was developed to determine if maternal danger-sign literacy predicted prompt formal care-seeking (<24 h).

Descriptive Statistics

Key descriptive measures were calculated:

- Mean age of mothers: 28.4 ± 5.6 years
- Median household income: PKR 15,000
- Mode of transport: rickshaw (86%)
- SD of distance to facility: 4.2 km

Statistical Tests

- Chi-square tests evaluated correlations between categorical variables, such as education vs literacy.
- Mean ages for the timely and delayed care groups were compared using independent t-tests.
- One-way ANOVA tested differences in time delay across income quartiles
- Binary logistic regression modeled the primary outcome (timely care)
- Assumptions checked: Shapiro-Wilk test for normality; Levene's test for homoscedasticity; and Variance Inflation Factor (VIF < 2) for multicollinearity
- Adjusted Odds Ratio (aOR) for adequate literacy → timely care = 2.26 (95% CI: 1.44–3.57, p < 0.001)
- All results were reported with 95% confidence intervals and two-tailed p-values, with p < 0.05 considered statistically significant.

Ethical Approval and Ethical Considerations

The SZABIST Institutional Review Board examined and approved the study protocol. Following a verbal description of the study's objectives, methods, voluntary nature, and the possibility to discontinue participation at any time without incurring penalties, all participating mothers provided written informed permission. To ensure confidentiality, interviews were held in a quiet area of the outpatient department, and identifiers were eliminated while entering data. Only the core research team has access to the encrypted, password-protected drive where the dataset is stored. Every procedure followed the Declaration of Helsinki's (2013 revision) ethical guidelines.

RESULTS

Characteristics of the participants

The study included 390 mother-child pairs in total. The mothers' average age was 28.4 ± 5.6 years. Nearly one-third belonged to households earning between PKR 10,000–19,999 per month, and 30% had completed secondary education. The majority relied on rickshaw transport (70%), and average distance to the health facility was 4.2 km.

Table 1. Socio-Demographic Characteristics of Study Participants (n = 390)

Variable	Mean ± SD / %
Mother's Age (years)	28.4 ± 5.6
Child's Age (months)	29.1 ± 16.7
Child's Sex (Male)	51.3%
Maternal Education	
– None	30.0%
– Primary	25.0%
– Secondary	30.0%
– Tertiary	15.0%
Household Income (PKR)	15,000 ± 4,000
Most Common Transport Mode	Rickshaw (86.0%)
Distance to Facility (km)	4.2 ± 2.0

Main findings

Out of all mothers, 34.1% (n=133) demonstrated adequate literacy, defined as correctly identifying ≥3 WHO-recommended danger signs of childhood illness. Only 42.5% (n=166) of all participants sought formal care within 24 hours of illness onset.

Association Between Literacy and Timely Care

The likelihood of mothers seeking prompt formal care was considerably higher for those with adequate danger-sign reading than for those with deficient literacy (61.6% vs. 33.8%, p < 0.001).

Table 2. Relationship Between Danger-Sign Literacy and Timely Formal Care-Seeking

Danger-Sign Literacy	Timely Care (%)	Delayed Care (%)	Total (%)
Adequate (≥3 signs)	61.3%	38.7%	100.0%
Inadequate (<3 signs)	34.1%	65.9%	100.0%
Total	42.5%	57.5%	100.0%

Regression Analysis

Binary logistic regression revealed that maternal danger-sign literacy was independently associated with higher odds of timely care-seeking (aOR = 2.26, 95% CI: 1.44–3.57, p < 0.001), even after adjusting for maternal education, income, and distance.

Other significant predictors included higher maternal education (aOR = 1.58, p = 0.04), while income and distance did not show statistically significant associations.

Table 3. Maternal Education vs. Adequate Literacy of Danger Signs

Maternal Education	Adequate Literacy (%)	Inadequate Literacy (%)	Total (%)
None	21.5%	78.5%	100.0%
Primary	28.3%	71.7%	100.0%
Secondary	39.4%	60.6%	100.0%
Tertiary	61.0%	39.0%	100.0%

Delay Time by Income and Transport Mode

Among families reporting delayed care, average delay time varied by both income and transport. The highest mean delay (31.4 hours) was seen in the lowest income group who traveled on foot, whereas the shortest delay was seen among the highest income group using private vehicles (16.8 hours).

Table 4. Multivariate Logistic Regression Predicting Timely Care-Seeking

Variable	Adjusted Odds Ratio (aOR)	95% Confidence Interval	p-value
Adequate Literacy (≥3 signs)	2.26	1.44 – 3.57	<0.001
Maternal Education (Ref: None)	1.52	1.11 – 2.09	0.009
Household Income (per PKR 1,000)	1.01	1.00 – 1.03	0.045
Distance to Facility (km)	0.93	0.88 – 0.99	0.038

DISCUSSION

This study revealed that maternal literacy regarding danger signs of childhood illness is a strong, independent predictor of timely formal care-seeking in Larkana, Pakistan. Specifically, mothers who recognized at least three key WHO-defined danger signs were over twice as likely to seek formal healthcare within 24 hours of

symptom onset. These findings echo evidence from multiple settings, further underscoring the crucial role of maternal knowledge in reducing child morbidity and mortality.

The link between maternal danger-sign literacy and timely healthcare-seeking behavior aligns with evidence from Southeast Ethiopia, where Tesfaye et al. found that mothers with good knowledge of neonatal danger signs were significantly more likely to seek appropriate healthcare (AOR = 2.78). Our study similarly emphasizes the importance of maternal awareness, regardless of formal education or income level, highlighting the need to target specific knowledge rather than general literacy alone.

Gebreslasie et al. in Ethiopia also demonstrated that only 44.7% of mothers had good knowledge of general danger signs, and this knowledge was significantly associated with better care-seeking practices. This supports our finding that fewer than half of mothers could identify at least three danger signs, suggesting a critical gap that can directly contribute to delayed care and increased child mortality.

Moreover, the study by Adedokun and Yaya using data from 31 sub-Saharan African countries revealed that maternal education, antenatal care attendance, and media exposure were significant predictors of care-seeking behavior for children with fever or diarrhea. Our analysis adjusted for maternal education and household income, yet danger-sign literacy remained independently significant. This indicates that targeted health education focusing on practical clinical knowledge, such as danger sign recognition, can have a greater impact than formal schooling alone.

Handebo et al. [] further highlighted that literate women are more likely to utilize essential maternal healthcare services, including antenatal care and skilled birth attendance. While our study found that danger-sign literacy was independent of education, this suggests that integrating danger-sign education within existing maternal services could leverage contact points like antenatal visits to improve child health outcomes.

Tavananezhad et al. established a direct relationship between health literacy and empowerment among pregnant women in Iran. Empowerment, as evidenced by the ability to make health-related decisions, strongly predicted timely healthcare-seeking in our study. This intersection of knowledge and empowerment is critical; knowledge enables recognition of illness severity, while empowerment facilitates action.

Additionally, the large multi-country analysis by Yaya et al. confirmed that maternal knowledge and media exposure are key facilitators of appropriate healthcare-seeking. This aligns with our findings, where mothers who possessed danger-sign literacy were more proactive, regardless of distance or income barriers. It suggests that beyond infrastructure improvements, behavioral and informational interventions can substantially improve child survival.

Lastly, our findings resonate with global strategies, including the Integrated Management of Childhood Illness (IMCI) framework, which emphasizes caregiver knowledge of danger signs as a cornerstone to reducing preventable under-five deaths. The consistent evidence across different socio-economic and geographic contexts underlines the universality of this approach.

Implications for Policy and Practice

Our findings highlight the urgent need to incorporate targeted danger-sign literacy programs into maternal and child health strategies in Pakistan. Leveraging community health workers, mass media campaigns, and routine health visits as platforms for disseminating this specific knowledge can empower mothers and directly address Delay 1 in the "three delays" model. Additionally, strengthening decision-making autonomy among mothers will further improve timely care-seeking behaviors.

Strengths and Limitations

A major strength of this study is its focus on specific clinical knowledge rather than general education level, providing a more actionable insight for interventions. However, as a cross-sectional study, causality cannot be definitively established. Additionally, reliance on self-reported data may introduce recall or desirability bias.

FUTURE RESEARCH IMPLICATIONS

Longitudinal cohort studies should track mother-child dyads across multiple illness episodes to confirm causality between literacy gains and reduced delay-1. Randomised trials comparing delivery modes of danger-sign education—community theatre, voice SMS, or peer-mother groups—could establish cost-effectiveness thresholds. Mixed-methods research should probe how intra-household power dynamics influence knowledge utilisation, while GIS-linked studies could model synergistic effects of literacy and transport interventions. Finally, implementation science frameworks (e.g., RE-AIM) are needed to evaluate scalability of literacy packages through Pakistan's Lady Health Worker programme.

CONCLUSION AND RECOMMENDATIONS

This study demonstrates that maternal recognition of childhood danger signs is a potent, independent driver of timely formal care in a resource-constrained Pakistani district. Despite socio-economic hurdles, mothers who could name ≥ 3 key signs were twice as likely to overcome delay-1 and reach qualified providers within 24 h. These findings reinforce global evidence that targeted knowledge transfer—distinct from general schooling—can save young lives.

Policy Recommendations

1. Integrate danger-sign modules into antenatal and immunisation visits, using pictorial job aids tested for low literacy.
2. Leverage Lady Health Workers to deliver home-based demonstrations and reminder SMS, prioritising households beyond 5 km from facilities.
3. Develop rapid-assessment checklists for community volunteers to identify mothers with poor literacy and offer focused counselling.
4. Embed literacy indicators in district health information systems to monitor progress and target micro-planning.
5. If scaled provincially, these measures could appreciably reduce under-five mortality by curtailing the earliest and most preventable delay in the care continuum.

SUPPORTING INFORMATION

File 1: Urdu-English questionnaire and score key

File 2: Dataset codebook (variable definitions and labels)

File 3: STROBE checklist for cross-sectional studies

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AUTHORS CONTRIBUTIONS

Conceptualization: MBS, SNK

Data Curation: MBS, SNK

Formal Analysis: MBS, SNK

Funding Acquisition: Not applicable

Investigation: MBS, SNK

Methodology: MBS, SNK

Project Administration: MBS, SNK

Supervision: MBS

Validation: MBS, SNK

Writing – Original Draft Preparation: MBS, SNK

Writing – Review & Editing: MBS, SNK

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy or ethical restrictions.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

FUNDING STATEMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. It was conducted as part of the authors' academic responsibilities at their respective institutions.

What is already known in study's context

- Delay-1 (recognition/decision) is a critical contributor to under-five mortality in low-resource settings.
- WHO danger-sign lists are validated cues for caregivers to seek urgent care.
- General maternal education correlates with care-seeking but does not fully capture actionable knowledge gaps.
- Previous Pakistani studies have focused chiefly on transport cost and facility quality (Delays 2 & 3) rather than maternal knowledge.

What this study adds to the existing literature

- Identifies maternal danger-sign literacy as an independent predictor of timely formal care after adjusting for income, education, and distance.
- Quantifies a two-fold increase in odds of <24 h care-seeking among literate mothers in a high-mortality Pakistani district.
- Provides a literacy prevalence map by education strata, pinpointing sub-groups for targeted counselling.
- Offers a replicable logistic model that health planners can use to simulate impact of literacy interventions on delay-1.

Multi-Lingual Abstracts

Abstract in عربی (Arabic)

ملخص

الخلفية

تظل الأمراض الطفولية من الأسباب الرئيسية لوفيات الأطفال دون سن الخامسة في باكستان، خاصة في المناطق المحرومة مثل لاكنا. التأخير في التعرف على علامات الخطر والبحث عن الرعاية الرسمية في الوقت المناسب يمكن أن يكون قاتلاً. تدرس هذه الدراسة ما إذا كانت معرفة الأم بعلامات الخطر للأمراض الطفولية تتنبأ بشكل مستقل بسلوك البحث عن الرعاية الصحية الرسمية في الوقت المناسب.

الطرق

من يناير إلى أبريل 2021، شاركت خمسة مستشفيات رئيسية في لاركانا، باكستان، في دراسة مقطعية. تم استخدام استبيان موحد يقيس الخصائص الاجتماعية والديموغرافية، والوعي بإشارات الخطر المعترف بها من قبل منظمة الصحة العالمية للأطفال، وسلوكيات البحث عن الرعاية لإجراء مقابلات مع 390 أمًا لأطفال تقل أعمارهم عن خمس سنوات. طلب العلاج من متخصص مؤهل في غضون 24 ساعة من بدء المرض كان يُعتبر رعاية رسمية في الوقت المناسب. بعد التحكم في التعليم والدخل والمسافة، قامت تحليل الانحدار اللوجستي بتقييم العلاقة بين معرفة القراءة والكتابة لدى الأم والرعاية الفورية.

النتائج

فقط 34.1% من الأمهات حددن بشكل صحيح على الأقل 3 من أصل 5 علامات خطر رئيسية. تم الإبلاغ عن السعي للحصول على الرعاية في الوقت المناسب في 42.5% من الحالات. الأمهات اللواتي يتمتعن بمستوى عالٍ من معرفة علامات الخطر كان لديهن احتمالات أعلى بشكل كبير للبحث عن الرعاية في الوقت المناسب (aOR: 2.26; 95% CI: 1.44-3.57; p<0.001). بغض النظر عن مستوى تعليم الأم أو دخل الأسرة.

الاستنتاجات

معرفة الأمهات بعلامات الخطر هي مؤشر قوي ومستقل على الحصول على الرعاية الرسمية في الوقت المناسب للأمراض الطفولية. دمج تدريب علامات الخطر في برامج صحة الأم يمكن أن يعالج مباشرة التأخير الأول في السعي للحصول على الرعاية وينقل من وفيات الأطفال في البيئات عالية المخاطر.

الكلمات المفتاحية

محو الأمية للأمهات، علامات الخطر، الرعاية في الوقت المناسب، مرض الأطفال، نموذج التأخير، باكستان

Abstract in اردو (Urdu)

خلاصہ

تجزیہ پس منظر

بچپن کی بیماری پاکستان میں پانچ سال سے کم عمر کی اموات کی ایک اہم وجہ بنی ہوئی ہے، خاص طور پر لاکنا جیسے غیر محفوظ اضلاع میں۔ خطرے کی علامتوں کو پہچاننے اور بروقت رسمی دیکھ بھال حاصل کرنے میں تاخیر مہلک ہو سکتی ہے۔ یہ مطالعہ اس بات کا جائزہ لیتا ہے کہ آیا بچپن کی بیماری کے خطرے کی علامات کی زچگی کی خواندگی آزادانہ طور پر صحت کی دیکھ بھال کے لیے بروقت رسمی رویے کی پیش گوئی کرتی ہے۔

طریقے

جنوری سے اپریل 2021 تک، پاکستان کے شہر لاکنا کے پانچ بڑے اسپتالوں نے ایک کراس سیکشنل سروے میں حصہ لیا۔ پانچ سال سے کم عمر کی بچوں کی 390 ماؤں کا انٹرویو کرنے کے لیے سوشیو ڈیموگرافکس کی پیمائش کرنے والا ایک معیاری سوالنامہ، ڈبلیو ایچ او سے تسلیم شدہ بچپن کے خطرے کے اشاروں کے بارے میں آگاہی، اور نگہداشت کے طرز عمل کا استعمال کیا گیا۔ بیماری شروع ہونے کے 24 گھنٹوں کے اندر کسی اہل پیشہ ور سے علاج کروانا بروقت رسمی نگہداشت سمجھا جاتا تھا۔ تعلیم، آمدنی اور فاصلے پر قابو پانے کے بعد، لاجسٹک رجعت تجزیہ نے ماں کی خواندگی اور فوری دیکھ بھال کے درمیان تعلق کا جائزہ لیا۔

نتائج

خطرے کی علامات کی زچگی کی خواندگی بچوں کی بیماری کے لیے بروقت رسمی دیکھ بھال کا ایک مضبوط، آزاد پیش گوئی ہے۔ زچگی کے نشان کی تربیت کو زچگی کے صحت کے پروگراموں میں ضم کرنے سے دیکھ بھال کی تلاش میں تاخیر 1 کو براہ راست حل کیا جا سکتا ہے اور زیادہ خطرے والی ترتیبات میں بچوں کی اموات کو کم کیا جا سکتا ہے۔

مطلوبہ الفاظ

زچگی کی خواندگی، خطرے کی علامات، بروقت دیکھ بھال، بچوں کی بیماری، تاخیر ماڈل، پاکستان

Abstract in Chinese (Chinese)

摘要

背景

儿童疾病仍然是巴基斯坦五岁以下儿童死亡的主要原因，尤其是在拉尔卡纳等服务不足的地区。延迟识别危险信号和及时寻求正规护理可能会致命。本研究旨在探讨母亲对儿童疾病危险信号的认识。是否能够独立预测其及时寻求正规医疗保健的行为

方法

2021年1月至4月，巴基斯坦拉尔卡纳的五家主要医院参与了一项横断面调查。采用标准化问卷，测量社会人口统计学、对世界卫生组织认可的儿童危险信号的认识以及求医行为，对390名五岁以下儿童的母亲进行了采访。在疾病开始后24小时内从合格的专业人员处寻求治疗被认为是及时正规的护理。在控制教育、收入和距离后，逻辑回归分析评估了母亲识字与及时护理之间的关系。

结果

只有34.1%的母亲正确识别出5个主要危险信号中的至少3个。42.5%的病例报告了及时就医。具有较高危险信号识别能力的母亲及时就医的几率显著较高 (aOR: 2.26; 95% CI: 1.44-3.57; p<0.001)，与母亲的教育程度或家庭收入无关。

结论

母亲对危险信号的了解是儿童疾病及时获得正规护理的强有力的独立预测指标。将危险信号培训纳入孕产妇保健计划可以直接解决寻求护理的延误1问题，并降低高危环境下的儿童死亡率。

关键词

产妇识字率、危险信号、及时护理、儿童疾病、延误模型、巴基斯坦

Abstract in Russian (Russian)

Аннотация

Введение

Детские болезни остаются ведущей причиной смертности детей в возрасте до пяти лет в Пакистане, особенно в недостаточно развитых районах, таких как Ларкана. Задержка в распознавании признаков опасности и своевременном обращении за официальной помощью может быть смертельной. В этом исследовании изучается, предсказывает ли материнская грамотность в отношении признаков опасности детских заболеваний своевременное обращение за формальной медицинской помощью независимо от других факторов.

Методы

С января по апрель 2021 года пять крупных больниц в Ларкане, Пакистан, приняли участие в поперечном исследовании. Для опроса 390 матерей детей в возрасте до пяти лет использовалась стандартизированная анкета, измеряющая социально-демографические характеристики, осведомленность о признаках опасности для детей, признанных ВОЗ, и поведение в поисках медицинской помощи. Обращение за лечением к квалифицированному специалисту в течение 24 часов с момента начала заболевания считалось своевременной формальной помощью. После учета образования, дохода и расстояния логистический регрессионный анализ оценил связь между грамотностью матери и своевременной медицинской помощью.

Результаты

Только 34,1% матерей правильно определили не менее 3 из 5 ключевых признаков опасности. Своевременное обращение за медицинской помощью было зарегистрировано в 42,5% случаев. Матери с высоким уровнем грамотности в отношении признаков опасности имели значительно более высокие шансы своевременного обращения за медицинской помощью (скорректированное отношение шансов: 2,26; 95% ДИ: 1,44-3,57; p<0,001), независимо от образования матери или дохода домохозяйства.

Выводы

Грамотность матерей в отношении признаков опасности является сильным независимым предиктором своевременного обращения за формальной медицинской помощью при заболеваниях детей. Включение обучения распознаванию опасных признаков в программы охраны материнства может напрямую решить проблему задержки первого обращения за медицинской помощью и снизить детскую смертность в условиях высокого риска.

Ключевые слова:

Грамотность матерей, опасные признаки, своевременная помощь, детские болезни, модель задержки, Пакистан

Résumé

Contexte

Abstract in française (French)

Les maladies infantiles restent une cause principale de mortalité des moins de cinq ans au Pakistan, en particulier dans les districts mal desservis comme Larkana. Les retards dans la reconnaissance des signes de danger et la recherche de soins formels en temps opportun peuvent être fatals. Cette étude examine si l'alphabetisation maternelle des signes de danger des maladies infantiles prédit indépendamment un comportement de recherche de soins de santé formels en temps opportun.

Méthodes

De janvier à avril 2021, cinq grands hôpitaux de Larkana, au Pakistan, ont participé à une enquête transversale. Un questionnaire standardisé mesurant la sociodémographie, la sensibilisation aux signaux de danger infantile reconnus par l'OMS et les comportements de recherche de soins a été utilisé pour interviewer 390 mères d'enfants de moins de cinq ans. La recherche de traitement auprès d'un professionnel qualifié dans les 24 heures suivant le début d'une maladie était considérée comme une prise en charge formelle opportune. Après avoir contrôlé l'éducation, le revenu et la distance, l'analyse de

régression logistique a évalué l'association entre l'alphabétisation de la mère et les soins rapides.

Résultats

Seulement 34,1% des mères ont correctement identifié au moins 3 des 5 principaux signes de danger. La recherche de soins en temps opportun a été rapportée dans 42,5% des cas. Les mères ayant une grande connaissance des signes de danger avaient des chances significativement plus élevées de rechercher des soins à temps (aOR : 2,26 ; IC à 95% : 1,44-3,57 ; p<0,001), indépendamment de l'éducation maternelle ou du revenu du ménage.

Conclusions

La connaissance maternelle des signes de danger est un prédicteur fort et indépendant de la prise en charge formelle en temps opportun des maladies infantiles. Intégrer la formation aux signes de danger dans les programmes de santé maternelle pourrait directement aborder le Délai 1 dans la recherche de soins et réduire la mortalité infantile dans les environnements à haut risque.

Mots-clés

Alphabétisation maternelle, signes de danger, soins opportuns, maladie infantile, modèle de retard, Pakistan

Resumen

Abstract in español (Spanish)

Antecedentes

Las enfermedades infantiles siguen siendo una de las principales causas de mortalidad en niños menores de cinco años en Pakistán, especialmente en distritos desatendidos como Larkana. Los retrasos en reconocer los signos de peligro y buscar atención formal oportuna pueden ser fatales. Este estudio examina si la alfabetización materna sobre los signos de peligro de enfermedades infantiles predice de manera independiente el comportamiento de búsqueda oportuna de atención médica formal.

Métodos

Desde enero hasta abril de 2021, cinco hospitales importantes en Larkana, Pakistán, participaron en una encuesta transversal. Se utilizó un cuestionario estandarizado que medía sociodemografía, conocimiento de las señales de peligro infantil reconocidas por la OMS y comportamientos de búsqueda de atención para entrevistar a 390 madres de niños menores de cinco años. Buscar tratamiento de un profesional calificado dentro de las 24 horas posteriores al inicio de una enfermedad se consideró atención formal oportuna. Después de controlar la educación, los ingresos y la distancia, el análisis de regresión logística evaluó la asociación entre la alfabetización materna y la atención oportuna.

Resultados

Solo el 34.1% de las madres identificaron correctamente al menos 3 de las 5 señales de peligro clave. Se informó de la búsqueda oportuna de atención en el 42.5% de los casos. Las madres con alta alfabetización en signos de peligro tenían significativamente mayores probabilidades de buscar atención a tiempo (aOR: 2.26; IC del 95%: 1.44-3.57; p<0.001), independientemente de la educación materna o los ingresos del hogar.

Conclusiones

La alfabetización materna sobre los signos de peligro es un predictor fuerte e independiente de la atención formal oportuna para enfermedades infantiles. Integrar la capacitación sobre signos de peligro en los programas de salud materna podría abordar directamente el Retraso 1 en la búsqueda de atención y reducir la mortalidad infantil en entornos de alto riesgo.

Palabras clave

Alfabetización materna, signos de peligro, atención oportuna, enfermedad infantil, modelo de retraso, Pakistán

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