Research Article *JICAH 2025 5(1) 26-37*
*DOI: **10.5281/zenodo.15373633***

Journal of Infant, Child and Adolescent Health

Investigation of the relationship between e-health literacy in pregnant women and readiness for hygienic care of the newborn

Gebelerde e-sağlık okuryazarlığının yenidoğanın hijyenik bakımına hazır oluşluğu ile ilişkisinin incelenmesi

Necla Kasımoğlu[a, *], Sevinç Köse Tuncer[b], Papatya Karakurt [c]

[a] *Erzincan Binali Yıldırım University Faculty of Health Sciences, Department of Child Health and Diseases Nursing, Erzincan, Türkiye*
[b] *Erzincan Binali Yıldırım University Faculty of Health Sciences, Department of Obstetrics, Gynecology and Diseases Nursing, Erzincan, Türkiye*
[c] *Erzincan Binali Yıldırım University Faculty of Health Sciences, Department of Nursing Fundamentals, Erzincan, Türkiye*

ABSTRACT

Purpose: This study was conducted to investigate the relationship between e-health literacy in pregnant women and readiness for hygienic care of the newborn.
Method: The universe of this cross-sectional and descriptive study consisted of 311 pregnant women who were followed up in the Gynecology and Obstetrics Polyclinics and NST Polyclinic of a Training and Research Hospital in a province in the east of Turkey. The research data were collected using a form containing the socio-demographic and obstetric characteristics of pregnant women, E-Health Literacy Scale and Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn.
Results: It was determined that the mean score of the pregnant women on the E-Health Literacy Scale was 28.60±5.81 and the mean score of the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn was 62.54±8.26. It was determined that there was no significant relationship between the E-Health Literacy Scale of the pregnant women included in the study and the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn (r= 0.015; p=0.793).
Conclusion: It was determined that the e-health literacy and readiness levels of newborn hygienic care of pregnant women included in the study were high. In this study, it was determined that there was no significant relationship between the e-health literacy level of pregnant women and the readiness level of pregnant women for newborn hygienic care.

Anahtar Kelimeler: E-health literacy; hygienic care; newborn; nurse; pregnant

ÖZET

Amaç: Bu araştırma gebelerde e-sağlık okuryazarlığının yenidoğanın hijyenik bakımına hazır oluşluğu ile ilişkisinin incelenmesi amacıyla yapılmıştır.
Yöntem: Kesitsel ve tanımlayıcı türde olan bu araştırma Türkiye'nin doğusunda bir ilin Eğitim ve Araştırma Hastanesi Kadın Hastalıkları ve Doğum Poliklinikleri ve NST Polikliniği'nde takip olan 311 gebe kadın ile yürütülmüştür. Araştırma verileri gebe kadınların, sosyo - demografik ve obstetrik özelliklerini içeren form, e-sağlık okuryazarlığı ve gebelerin yenidoğanın hijyenik bakımına hazır oluş ölçekleri kullanılarak toplanmıştır.
Bulgular: Gebelerin E-Sağlık Okuryazarlığı Ölçeği puan ortalamasının 28.60±5.81 ve Gebelerin Yenidoğanın Hijyenik Bakımına Hazır Oluş Ölçeği puan ortalamasının ise 62.54±8.26 olduğu belirlenmiştir. Araştırma kapsamına alınan gebelerin E-Sağlık Okuryazarlığı Ölçeği ve Gebelerin Yenidoğanın Hijyenik Bakımına Hazır Oluş Ölçeği arasında anlamlı bir ilişki olmadığı saptanmıştır (r= 0.015; p=0.793).
Sonuç: Çalışmada, hamile kadınlar arasında e-sağlık okuryazarlığı ve yenidoğan hijyenik bakımına hazır olma düzeylerinin yüksek olduğu bulunmuştur. Bu bağlamda, hamile kadınların e-sağlık okuryazarlığını değerlendirme ve geliştirme çabalarının anne ve çocuk sağlığını iyileştirmeye önemli bir katkı sağlayacağı düşünülmektedir.

Keywords: E-sağlık okuryazarlığı; hijyenik bakım; yenidoğan; hemşire; gebe

Introduction

With the rapid development of Internet technology, more and more people are using networks to communicate and obtain information in their daily lives and work. Due to the abundance of health information sources available online and the ease of access to them, individuals are gradually shifting away from traditional

This study was presented as a oral presentation at The 10th International "Artemis" Scientific Research Congress on November 29-30, 2024 Türkiye

* **Corresponding author.**
E-mail address: necla_24celik@hotmail.com (N.K.)

Geliş Tarihi / Received: 06.01.2025 **Kabul Tarihi**/Accepted: 19.03.2025

sources of health information (such as newspapers, magazines, and doctors' offices) and turning to the internet (Wang, Wu & Qi , 2021). Electronic health literacy (e-health literacy) refers to an individual's ability to search for, locate, understand, evaluate, and use health information from electronic resources to address health-related issues(Shekofteh, Ghaedi, Valizadeh-Haghi & Baghestani, 2022; Uslu & Purtul, 2023; Wang et al., 2021).

Pregnancy is a dynamic and unique process in a woman's life, characterised by numerous anatomical, physiological, biochemical and psychological changes (Gangakhedkar & Kulkarni, 2021; Jain, Shagana, Dhanraj & Nirosa, 2018). These physiological and psychological effects raise questions and create a need for information about pregnancy, childbirth, postpartum breastfeeding, and baby health and development (Ünlü & Cesur, 2023). Pregnant women often seek information to feel safer and better prepared, to make decisions during the perinatal period, and to prepare for the responsibilities of motherhood. Adequate information helps to reduce stress and anxiety, provides support, and increases self-esteem and internal control. On the other hand, failure to meet pregnant women's information needs can increase their anxiety and worry, create a risk of isolation, and be perceived as a sign of low self-confidence as a parent. It is therefore essential that pregnant women have access to the right information at the right time, tailored to their needs (Janmardi, Noroozi, Mostafavi & Ashrafi-Rizi, 2021; Vogels-Broeke, Daemers, Budé, de Vries & Nieuwenhuijze, 2022).

A newborn's skin undergoes significant developmental changes as it transitions from the aqueous intrauterine environment to the aerobic extrauterine environment (Gupta et al., 2023). The newborn's environment changes from a watery uterus to a dry, aerobic world. The newborn's skin must adapt and mature to provide protection against infection, toxins, ultraviolet (UV) radiation, temperature changes and transepidermal water loss (TEWL) (Johnson & Hunt, 2019). As effective skin barrier function is crucial for the neonate and the treatment of skin damage is limited due to the immaturity of the skin, it is essential to optimise skin care (Çaka & Çınar, 2020). Thus, during the neonatal period, it is crucial to properly meet the basic hygienic care needs of the baby in order to protect against infections and reduce neonatal mortality (Çaka & Çınar, 2020; Toksöz, 2023). Numerous studies in the literature have shown a lack of knowledge among mothers regarding the hygienic care of newborns during the postpartum period (Adigun, Olabisi, Ogbeye & Kehinde, 2018; Shamim, Sharmin, Zannatul & Shafi, 2019; Silva et al., 2023; Taşdemir, 2022; Toksöz, 2023). When the literature is examined, it has been seen that pregnant women obtain information about the hygiene and care of their newborn babies from sources such as family elders, health workers, books/brochures, social media, the internet and other written materials(Ertan & Yılmaz, 2021; Turgut et al., 2017). In a study conducted by Karatay in our country, it was determined that the level of readiness of pregnant women for hygienic care of their newborns was at a moderate level (Karatay, 2023). In another study, it was determined that there was a positive relationship between health literacy and the level of readiness for hygienic care of their newborns (Büyükalim, 2023). In the study conducted by Ertan and Yılmaz, it was determined that mothers with limited health literacy had lower mean scores for knowledge of home care of their newborns (Ertan & Yılmaz, 2021).Given the lack of awareness, confusion and fear among parents regarding the best skin care practices for newborns, postpartum caregivers play a crucial role (Kamali, Ahmadian, Khajouei & Bahaadinbeigy, 2018). Pregnant women need adequate knowledge, motivation and skills to access, understand, evaluate and use health information to make decisions about their own health and that of their unborn child. These skills are known as health literacy(Meldgaard et al., 2022). Nurses have an important role to play in promoting pregnancy-specific health literacy, which can affect both maternal and infant health (Şahin, Çatıker, Özdil & Bulucu Büyüksoy, 2023).

This study aims to examine the relationship between e-health literacy among pregnant women and their willingness to provide hygienic care to newborns.

The questions aimed to be answered in the research are as follows;

1. What are the levels of e-health literacy and hygienic care readiness of pregnant women?

2. What are the demographic characteristics of pregnant women that affect their levels of e-health literacy and hygienic care readiness?
3. Is there a relationship between the levels of e-health literacy and hygienic care readiness of pregnant women?

Method

Study Design and Setting

This is a cross-sectional and descriptive study. The study population consisted of all pregnant women who received care at the Obstetrics and NST Clinics of a teaching and research hospital in eastern Turkey between 15 May and 15 October 2024. No sample selection was made in the study; pregnant women who applied to the gynecology and obstetrics clinics during the study period and met the criteria for participation in the study were included in the study.

Inclusion criteria for the sample:

- 18 years of age and above,
- At least in the 14th week of pregnancy,
- Having a healthy fetus,
- Not having any psychiatric or chronic health problems before pregnancy,
- Not having received infertility treatment,
- Having a healthy pregnancy,
- Literate,
- No communication problems (hearing impairment, visual impairment),
- Having and using the internet,

A total of 311 pregnant women were included in the study group.

Data Collection

Data were collected by the researcher between 15 May and 15 October 2024 at the obstetrics and NST clinics of a teaching and research hospital in eastern Turkey. Pregnant women included in the study were informed about the research and verbal consent was obtained. In accordance with the principle of confidentiality, interviews were conducted face-to-face in the NST room and waiting areas of the clinic. After explaining the purpose of the study, participants were asked to mark the options on the questionnaire that best represented their responses. Data collection took approximately 10-15 minutes per participant.

*Sociodemographic Information Form:*A 17-item form developed based on a literature review to determine the socio-demographic and obstetric characteristics of pregnant women included in the study (Çaka & Çınar, 2020; Kamali et al., 2018; Silva et al., 2023; Taşdemir, 2022; Toksöz, 2023).

E-Health Literacy Scale: Developed by Norman and Skinner (2006) to assess individuals' perceived ability to use information technology for health purposes and to help determine the compatibility between e-health programmes and consumers (Norman & Skinner, 2006). The Turkish validity and reliability study of the scale was conducted by Tamer Gencer in 2017. The scale consists of 8 items measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), and 2 items not included in the total score related to internet usage. The scale has no reverse-coded items or cut-off points due to the small number of factors. The total score ranges from 8 to 40, with higher scores indicating higher levels of e-health literacy. The Cronbach's alpha coefficient for the Turkish version was found to be 0.915 (Gencer, 2017). In this study, the alpha value was 0.934.

Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn: Developed by Çaka and Çınar (2020) to assess pregnant women's readiness for hygienic care of newborns. This 7-point Likert scale includes 10 positive items scored from 1 (not at all ready) to 7 (completely ready). The content validity index of the scale is 0.97. In the explanatory factor analysis, the Kaiser Meyer Olkin value was found to be 0.917. The confirmatory factor analysis fit indices were found to be χ^2/df: 4.061, RMSEA: 0.136, GFI: 0.849, CFI: 0.910, SRMR: 0.0587. As a result of the reliability analysis; the Cronbach's Alpha value of the scale was found to be 0.93. The total score ranges from 10 to 70, with higher scores indicating greater readiness. The scale does not include reverse-coded items or sub-dimensions.

Interpretation of scores:

- 1-3: Not ready for neonatal hygiene care
- 4-5: Moderately prepared for neonatal hygiene care

6 and above: Fully prepared for the hygienic care of newborns (Çaka & Çınar, 2020) The Cronbach's alpha coefficient for this scale in this study was 0.917.

Ethical Considerations

Permission for the scales used in the research was obtained from the authors by email. Ethical approval was obtained from the Non-Interventional Research Ethics Committee of Erzincan Binali Yıldırım University on 1 March 2024 (approval number 02).

Data Analysis

Data coding, statistical analysis and evaluation were performed using IBM SPSS 25.0 (IBM SPSS Statistics for Windows, version 25.0, Armonk, NY: IBM Corp). Descriptive statistics such as frequency, mean, standard deviation and percentage calculations were used for data analysis. Normality of distribution was assessed using kurtosis and skewness coefficients. As the data were normally distributed, independent samples t-tests were used to compare two groups and one-way ANOVA tests were used for multiple groups. Pearson correlation was used to examine the relationship between scale scores and sub-dimensions. Reliability coefficients of the scales were calculated using Cronbach's alpha. A p-value of <0.05 was considered statistically significant.

Study Limitations

This study was conducted in a single centre and only included pregnant women who presented to the antenatal and NST clinics, so the results are only generalizable to these clinics. As the research was conducted in a specific region, cultural and social norms may have influenced the results, and replication in different populations is needed.

Bulgular

It was determined that 39.9% of the pregnant women included in the study were aged between 25–29 years, 41.2% were high school graduates, 83% were unemployed, and 73% reported income equal to their expenses. Among the participants, 43.4% were experiencing their first pregnancy, 70.4% had planned pregnancies, 62.7% were in their third trimester, and 41.5% had no living children. Additionally, 56.9% considered the internet useful, and 61.1% stated that access to online health resources was important (Table 1).

Table 1. Distribution of socio-demographic characteristics of pregnant women (n=311)

Descriptive Features		**n**	**%**
Age	18-19	6	1.9
	20-24	70	22.5
	25-29	124	39.9
	30-34	57	18.3
	35-39	44	14.2
	40 +	10	3.2
Educational Status	Primary School	72	23.1
	High School	128	41.2
	University	111	35.7
Employment Status	Yes	53	17.0
	No	258	83.0
Perceived Income Status	Income less than expenditure	62	19.9
	Income equals expenditure	227	73.0
	Income higher than expenditure	22	7.1
Number of Pregnancies	1	135	43.4
	2	95	30.5
	3	54	17.4
	4	14	4.5
	5	13	4.2
Planned Pregnancy Status	Yes	219	70.4
	No	92	29.6
Trimester Status	2. trimester	116	37.3
	3. trimester	195	62.7
Number of Living Children	None	129	41.5
	1	90	28.9
	2	58	18.6
	3	22	7.1
	4	9	2.9
	5	3	1.0
Perceived Usefulness of Internet	Not useful at all	20	6.4
	Not useful	34	10.9
	No opinion	68	21.9
	Useful	177	56.9
	Very useful	12	3.9
Importance of Being Able to Access Health Resources on the Internet	Not important at all	16	5.1
	Not important	33	10.6
	No opinion	47	15.1
	Important	190	61.1
	Very important	25	8.1

Table 2 shows that the mean score of the participants on the E-Health Literacy Scale was 28.60 ± 5.81, while the mean score on the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn was 62.54 ± 8.26 (Table 2).

Table 2. Mean scores of pregnant women's e-health literacy and scale for readiness of pregnant women to hygienic care of the newborn (n=311)

Scales	Mean±SD	Min-Max
E-Health Literacy Scale	28.60±5.81	8-40
Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn	62.54±8.26	10-70

No significant difference was observed in the mean scores of the E-Health Literacy Scale based on the participants' age ($p>0.05$). However, a statistically significant difference was found in the scores of the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn based on age. Pregnant women aged 35–39 had higher readiness levels compared to other age groups ($p<0.05$).

A significant difference was detected in the mean scores of the E-Health Literacy Scale based on education level, with university graduates scoring higher than primary and high school graduates ($p<0.05$). However, no significant difference was found in the mean scores of the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn based on education level ($p>0.05$).

Significant differences were identified in the mean scores of both scales based on participants' perceived income status and the number of pregnancies. Pregnant women with income higher than their expenses scored higher in E-Health Literacy, while those with income equal to their expenses scored higher in readiness for newborn hygienic care. Women experiencing their first pregnancy had higher E-Health Literacy scores, whereas those in their fourth pregnancy had higher readiness scores for newborn hygienic care ($p<0.05$).

A statistically significant difference was observed in the mean scores of both scales based on the trimester of pregnancy. Pregnant women in their second trimester had higher scores in both E-Health Literacy and readiness for newborn hygienic care ($p<0.05$).

A significant difference was found in the mean scores of the E-Health Literacy and Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn based on the number of living children. Women with five living children scored the highest in E-Health Literacy, while those with four children scored the highest in readiness for newborn hygienic care ($p<0.05$).

A statistically significant difference was detected in the mean scores of the E-Health Literacy Scale based on perceptions of the usefulness of the internet and the importance of accessing health resources online ($p<0.05$). Pregnant women who found the internet very useful and those who considered accessing online health resources very important had higher E-Health Literacy levels than others. However, no significant difference was observed in readiness scores based on these perceptions ($p>0.05$).

No significant differences were identified in the mean scores of either scale based on participants' employment status or whether the pregnancy was planned ($p>0.05$) (Table 3).

Table 3. Comparison of e-health literacy and readiness of pregnant women to hygienic care of the newborn according to socio-demographic characteristics of pregnant women (n=311)

Descriptive Features	Category	e-HL	SRPWHCN
Age	18-19	30.33±0.09	62.83±5.67
	20-24	28.80±6.16	62.90±6.91
	25-29	29.28±5.29	60.60±8.90
	30-34	28.30±6.25	64.26±6.92
	35-39	26.84±5.73	66.00±4.64
	40 +	27.30±6.65	58.80±18.29
Test and p value	F, p	F=1.410 p=.220	**F=4.032 p=.001**
Educational Status	Primary School	25.44±6.46	63.61±8.94
	High School	29.09±5.41	63.00±6.85
	University	30.09±5.06	61.32±9.15
Test and p value	F,p	**F=16.151 p=.000**	F=2.040 p=.132
Employment Status	Yes	29.36±5.34	61.47±8.89
	No	28.45±5.90	62.76±8.12
Test and p value	t, p	t=1.037 p=.301	t=-1.035 p=.302
Perceived Income Status	Income less than expenditure	26.76±5.50	61.50±9.48
	Income equals expenditure	28.90±5.91	63.17±7.65
	Income higher than expenditure	30.77±4.34	59.00±9.71
Test and p value	F,p	**F=5.077 p=.007**	**F=3.216 p=.041**
Number of Pregnancies	1	29.78±4.98	60.65±8.79
	2	28.95±5.90	63.27±8.89
	3	26.91±6.18	64.17±5.39
	4	25.57±6.90	68.64±2.37
	5	24.23±6.48	63.46±6.51
Test and p value	F, p	**F=5.729 p=.000**	**F=4.639 p=.001**
Planned Pregnancy Status	Yes	28.88±5.87	62.17±8.77
	No	27.95±5.65	63.41±6.84
Test and p value	t,p	t=1.297 p=.196	t=-1.209 p=.227
Trimester Status	2. trimester	29.09±5.26	64.03±6.58
	3. trimester	28.31±6.12	61.66±9.01
Test and p value	t, p	**t=4.010 p=.046**	**t=5.405 p=.021**
Number of Living Children	None	28.63±6.31	60.54±8.54
	1	27.41±5.82	63.03±8.98
	2	25.14±5.22	64.05±6.82
	3	28.22±6.04	66.59±4.50
	4	24.00±5.36	66.67±4.03
	5	29.85±5.22	62.33±10.79
Test and p value	F, p	**F=3.773 p=.002**	**F=3.620 p=.003**
Perceived Usefulness of Internet	Not useful at all	22.30±8.63	62.40±9.05
	Not useful	26.21±5.94	60.74±10.87
	No opinion	25.57±6.07	63.62±9.42
	Useful	30.74±3.73	62.31±7.17
	Very useful	31.58±6.46	65.17±6.00
Test and p value	F, p	**F=24.338 p=.000**	F=1.036 p=.389
Importance of Being Able to Access Health Resources on The Internet	Not important at all	18.13±7.86	62.81±6.36
	Not important	26.42±6.98	64.12±6.02
	No opinion	24.60±5.00	64.89±9.82
	Important	30.32±3.80	61.52±8.12
	Very important	32.72±4.38	63.60±6.47
Test and p value	F, p	**F=40.877 p=.000**	F=2.119 p=.078

No significant correlation was found between the scores on the E-Health Literacy Scale and the Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn (r= 0.015; p=0.793) (Table 4).

Table 4. The relationship between pregnant women's e-health literacy and scale for readiness of pregnant women to hygienic care of the newborn (n=311)

Scales	E-Health Literacy Scale	
	r	p
Scale For Readiness of Pregnant Women To Hygienic Care of The Newborn	0.015	0.793

Discussion

Health literacy is an important concept in enhancing health behaviors, self-confidence, and self-efficacy in pregnant women (Ünlü & Cesur, 2023). In this study, which examines the relationship between e-health literacy in pregnant women and their readiness for the hygienic care of newborns, it was determined that the e-health literacy levels of pregnant women were high. Similarly, numerous studies in the literature report high levels of e-health literacy among pregnant women (Baltacı, Kaya & Kılıçkaya, 2023; Çini, 2023; Demir, Dağ & Özpinar, 2024; Rahdar, Montazeri, Mirzaee & Ahmadian, 2023; Şahin et al., 2023). These findings align with the present study and can be attributed to the increased literacy and internet usage rates among women in Turkey.

In this study, it was found that pregnant women with a university education had higher e-health literacy levels. In a similar study by Keleş et al., pregnant women with at least a high school diploma or higher education demonstrated higher e-health literacy levels (Keles, Kaya, Yakşi, Kaya & Kumru, 2024). Similarly, Demir et al. observed higher levels among associate degree graduates (Demir et al., 2024) , and Baltacı et al. found higher levels among secondary school graduates (Baltacı et al., 2023). However, Rahdar et al. reported no significant effect of education level on e-health literacy (Rahdar et al., 2023). Higher education levels likely encourage women to seek information, and access to technological tools becomes easier with higher education and employment opportunities.

Pregnant women with incomes exceeding their expenses demonstrated higher e-health literacy levels in this study. While some studies suggest no relationship between income and health literacy (Rahdar et al., 2023), others indicate that women with equal or higher income levels have higher health literacy scores (Baltacı et al., 2023; Keles et al., 2024). These findings are expected, as higher income levels facilitate access to desired technological tools, influencing health literacy positively.

Women experiencing their first pregnancy had higher e-health literacy levels compared to those with multiple pregnancies. Similarly, women with five living children had the highest e-health literacy levels. In previous studies, first-time pregnant women had higher average scores compared to other groups (Demir et al., 2024). However, Baltacı et al. found that the number of living children did not affect e-health literacy levels (Baltacı et al., 2023). The curiosity associated with a first pregnancy regarding the process, postpartum period, and newborn care may drive higher e-health literacy levels. First-time pregnant women may quickly access online resources for answers to their questions about their baby’s and their own health.

Pregnant women in their second trimester exhibited higher e-health literacy levels. Supporting this finding, Demir et al. reported higher average e-health literacy scores among women in their second trimester compared to other groups (Demir et al., 2024). Similarly, Köroğlu found higher health literacy scores among women in their second trimester (Köroğlu, 2023). However, some studies indicate no significant effect of gestational age on health literacy levels (Elbarazi et al., 2024; Eser & Çelik, 2022; Kulakci Altintas, Kilci Erciyas & Cetin, 2023). The first trimester is often referred to as an adjustment period for both the mother and the baby, marked

by physiological and psychological changes due to hormonal shifts. The second trimester, on the other hand, is often considered a period of balance when symptoms subside, and curiosity about the pregnancy and postpartum process may enhance e-health literacy (Coşar, Demirci, Yeşilçiçek Çalık & Çil Akıncı, 2017)

Pregnant women who found the internet highly useful and considered accessing online health resources as very important had higher e-health literacy levels. Similar findings have been reported in the literature, where women who emphasize the usefulness of the internet and the importance of accessing health-related resources online score higher in health literacy (Baltacı et al., 2023; Keles et al., 2024).

The readiness levels of pregnant women for hygienic care of newborns were found to be high in this study. Similarly, Büyükalim reported high readiness levels among pregnant women for hygienic care of newborns (Büyükalim, 2023). In contrast, Karaaslan and Karatay identified moderate readiness levels in their study (Karaarslan & Akin, 2024; Karatay, 2023). This may be attributed to the high rates of prenatal care among women in Turkey.

Pregnant women aged 35–39 had higher readiness levels for hygienic care of newborns compared to other age groups. Studies by Karatay (2023) and Büyükalim (2023) also reported higher readiness levels among older women (Büyükalim, 2023; Karatay, 2023) . Karaarslan and Akin identified significant differences in readiness levels for newborn hygienic care among women aged 36–40 (Karaarslan & Akin, 2024). Conversely, Çaka et al. found no relationship between age and readiness for hygienic care (Çaka, Uslu, Pekşen & Çınar, 2023). It is suggested that increased age enhances maternal confidence and experience in infant care.

Women with incomes equal to their expenses had higher readiness levels for hygienic care of newborns. In contrast, some studies report no significant relationship between income and readiness for newborn care (Başar, 2023; Büyükalim, 2023). Although findings differ, the lack of an income effect on readiness may reflect the nearly universal access to prenatal care among pregnant women.

Women experiencing their fourth pregnancy had higher readiness levels for hygienic care compared to other groups. Similarly, Karatay found higher readiness levels among women with 2, 3, or more pregnancies than those with their first pregnancy (Karatay, 2023). Başar also reported higher readiness levels among women with 2–3 or more pregnancies compared to those with a single pregnancy (Başar, 2023). The increased knowledge, skills, and experience in newborn care associated with higher parity likely contribute to this finding.

Women in their second trimester demonstrated higher readiness levels for newborn hygienic care. However, Karatay and Başar reported no significant relationship between gestational age and readiness for hygienic care(Başar, 2023; Karatay, 2023).

Pregnant women with four living children had higher readiness levels for newborn hygienic care than other groups. Similar findings were reported by Büyükalim, who found significantly higher readiness levels among women with children compared to those without (Büyükalim, 2023). Yıldız and Boyacı observed that mothers' knowledge scores about newborn care increased with the number of children (Yıldız & Boyacı, 2019). In Başar's study, women without children had lower readiness levels compared to other groups (Başar, 2023). The increasing experience in prenatal care and newborn management with higher parity likely explains these results.

Korkmaz et al. highlighted e-health literacy as a significant factor influencing healthy lifestyle behaviors in pregnant women (Korkmaz, Kılınç İşleyen, Kartal & Koştu, 2024). However, no significant relationship was found in this study between e-health literacy and readiness for hygienic care of newborns. Contrarily, Büyükalim identified a positive relationship between health literacy and readiness for newborn hygienic care (Büyükalim, 2023). In today's health system, pregnant women may have varying degrees of knowledge and skills regarding newborn care, which is directly related to their e-health literacy. It is thought that this result is

due to the fact that pregnant women can easily access prenatal care services and that training on newborn care is provided to all pregnant women in prenatal services.

Conclusion

The study determined that the e-health literacy levels and readiness for hygienic care of newborns among pregnant women included in the research were high. It was also found that certain variables related to pregnant women influenced their e-health literacy and readiness levels for newborn hygienic care. However, no significant relationship was identified between e-health literacy and readiness for hygienic care of newborns.

In this context, it is considered that evaluating and enhancing e-health literacy among pregnant women could significantly contribute to improving maternal and child health. Integrating e-health literacy training into prenatal education and promoting the effective use of digital tools can help improve maternal and newborn care during both the prenatal and postpartum periods.

Nurses can play a crucial role in addressing the e-health literacy needs of pregnant women, significantly improving health outcomes and enabling women to effectively manage their health throughout pregnancy. By doing so, nurses can empower women to make informed decisions about their own health and the care of their newborns.

References

Adigun, A. S., Olabisi, A. P., Ogbeye, G. B., & Kehinde, A. (2018). New born care practices and knowledge of risk factors associated with neonatal mortality among post natal mothers in Ibadan. *International Journal of Caring Sciences*, *11*(2), 1050–1058. http://www.internationaljournalofcaringsciences.org/

Baltacı, N., Kaya, N., & Kılıçkaya, İ. (2023). Investigation of e-health literacy and healthy lifestyle behaviors of pregnant women. *STED*. https://doi.org/10.17942/sted.1229364

Başar, F. (2023). *Gebelerin doğum öncesi bakım memnuniyetlerinin prenatal emzirme öz-yeterliliklerinin ve yenidoğan bakımına hazır olma durumlarının incelenmesi / Prenatal care satisfaction of pregnants prenatal breastfeedingexamining self-efficacy and readiness for newborn care*. Kütahya Sağlık Bilimleri Üniversitesi. Lisansüstü Eğitim Enstitüsü. Hemşirelik Ana Bilim Dalı. Yüksek Lisans Tezi. Kütahya

Büyükalim, B. Ü. (2023). Gebelerin sağlık okuryazarlık düzeyi ve yenidoğanın hijyenik bakımı konusunda bilgi düzeylerinin değerlendirilmesi / Evaluation of pregnancy's health literacy level and knowledge level of newborn hygienic care. Sağlık Bilimleri Üniversitesi. Konya Şehir Hastanesi. Aile Hekimliği Ana Bilim Dalı. Tıpta Uzmanlık Tezi. Konya

Çaka, S. Y., & Çınar, N. (2020). Development of the Scale for Readiness of Pregnant Women to Hygienic Care of the Newborn, and its Validity and Reliability Study. *DEUHFED, 13*(1), 10–18. https://dergipark.org.tr/tr/pub/deuhfed

Çaka, S. Y., Uslu, H. Y., Pekşen, S., & Çınar, N. (2023). Relationship between loneliness, social support and readiness for hygienic care of the newborn in pregnant women. *Online Türk Sağlık Bilimleri Dergisi*, *8*(1), 59–65. https://doi.org/10.26453/otjhs.1133951 https://doi.org/10.26453/otjhs.1133951

Çini, E. (2023). *Gebelerin e-sağlık okuryazarlığının cinselliğe karşı tutumları ile ilişkisi / The relationship between pregnant women's e-health literacy and their attitudes toward sexuality*. Necmettin Erbakan Üniversitesi. Sağlık Bilimleri Enstitüsü. Hemşirelik Ana Bilim Dalı. Doğum ve Kadın Hastalıkları Hemşireliği Bilim Dalı. Yüksek Lisans Tezi. Konya

Coşar, F. Ç., Demirci, N., Yeşilçiçek Çalık, K., & Çil Akıncı, A. (2017). Common physical complaints during pregnancy. *Zeynep Kamil Tıp Bülteni*, *48*(4), 135–141. https://dx.doi.org/10.16948/zktipb.304443

Demir, Y., Dağ, E., & Özpinar, S. (2024). The Relationship of e-health literacy with cyberchondria: A cross-sectional study on pregnant women. *Journal of Health Literacy*, *9*(1), 89–101. https://doi.org/10.22038/JHL.2024.76171.1501

Elbarazi, I., Alam, Z., Ali, N., Loney, T., Al-Rifai, R. H., Al-Maskari, F., & Ahmed, L. A. (2024). Health literacy among pregnant women in the United Arab Emirates: The Mutaba'ah study. *Women's Health*, *20*. https://doi.org/10.1177/17455057231224179

Ertan, D., & Yılmaz, M. (2021). The Relationship between Health Literacy Levels of Mothers of Infants Treated in the Neonatal Intensive Care Unit with their Knowledge of Baby Care at Home. *İzmir Kâtip Çelebi Üniversitesi Sağlık Bilimleri Fakültesi Dergisi*, *6*(2), 31–38. https://api.core.ac.uk/oai/oai:acikerisim.ikcu.edu.tr:11469/1986

Eser, N., & Çelik, N. (2022). Association between rational drug use and health literacy among pregnant women: a cross-sectional

study. *Women & Health*, *62*(7), 612–620. https://doi.org/10.1080/03630242.2022.2100033

Gangakhedkar, G. R., & Kulkarni, A. P. (2021). Physiological changes in pregnancy. *Indian Journal of Critical Care Medicine*, *25*(S3), 189–192. https://doi.org/10.5005/jp-journals-10071-24039

Gencer, Z. T. (2017). Analysis of validity and reliability of norman and skinner's e- health scale lıteracy for cultural adaptation. *İstanbul Üniversitesi İletişim Fakültesi Dergisi*, 131–146. https://doi.org/10.17064/iuifd.333165

Gupta, P., Nagesh, K., Garg, P., Thomas, J., Suryawanshi, P., Sethuraman, G., Hazarika, R. D., Verma, R. J., Kumar, C. S., Kumari, S., Taneja, S., Chavhan, V., Thakor, P., & Pandita, A. (2023). Evidence-based consensus recommendations for skin care in healthy, full-term neonates in India. *Pediatric Health, Medicine and Therapeutics*, *Volume 14*, 249–265. https://doi.org/10.2147/PHMT.S414091

Jain, A. R., Shagana, J. A., Dhanraj, M., & Nirosa, T. (2018). Physiological changes in pregnancy. In *Drug Invention Today* | (Vol. 10). https://www.researchgate.net/publication/327048037

Javanmardi, M., Noroozi, M., Mostafavi, F., & Ashrafi-Rizi, H. (2021). Exploring Women's Health Information Needs During Pregnancy: A Qualitative Study. *Journal of Family & Reproductive Health*. https://doi.org/10.18502/jfrh.v14i4.5209

Johnson, E., & Hunt, R. (2019). Infant skin care: updates and recommendations. *Current Opinion in Pediatrics*, *31*(4), 476–481. https://doi.org/10.1097/MOP.0000000000000791

Kamali, S., Ahmadian, L., Khajouei, R., & Bahaadinbeigy, K. (2018). Health information needs of pregnant women: Information sources, motives and barriers. *Health Information & Libraries Journal*, *35*(1), 24–37. https://doi.org/10.1111/hir.12200

Karaarslan, D., & Akin, H. Y. S. (2024). How Does the anxiety of primiparae affect their readiness for newborn care? Ethnic primiparous experiences. *Journal of Racial and Ethnic Health Disparities*. https://doi.org/10.1007/s40615-024-02161-3

Karatay, H. G. (2023). Farklı sosyal değişkenlere göre gebelerin yenidoğanlarda hijyenik bakıma hazır oluş düzeylerinin belirlenmesi. Determination of pregnants level of readiness for hygienic care in newborns according to different social variables. Zonguldak Bülent Ecevit Üniversitesi. Sağlık Bilimleri Enstitüsü. Çocuk Sağlığı ve Hastalıkları Ana Bilim Dalı. Yüksek Lisans Tezi. Zonguldak.

Keles, E., Kaya, L., Yakşi, N., Kaya, Z., & Kumru, P. (2024). Effects of eHealth literacy on maternal and neonatal outcomes. *Women & Health*, 64(10), 829-838. https://doi.org/10.1080/03630242.2024.2420211

Korkmaz, G. A., Kılınç İşleyen, E., Kartal, A., & Koştu, N. (2024). The relation between eHealth literacy and healthy lifestyle behaviours in pregnant women. *Health Promotion International*, *39*(2), daaae022. https://doi.org/10.1093/heapro/daae022

Kulakci Altintas, H., Kilci Erciyas, S., & Cetin, S. (2023). Factors affecting health literacy and pregnancy stress in pregnant women. *International Journal of Caring Sciences*, *16*(2), 686–696. https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=ccm&AN=172270397&lang=pt-pt&site=ehost-live

Meldgaard, M., Maimburg, R. D., Damm, M. F., Aaby, A., Peeters, A., & Maindal, H. T. (2022). The Health Literacy in Pregnancy (HeLP) Program Study Protocol: Development of an Antenatal Care Intervention Using the Ophelia Process. *International Journal of Environmental Research and Public Health*, *19*(8), 4449. https://doi.org/10.3390/ijerph19084449

Norman, C. D., & Skinner, H. A. (2006). eHealth literacy: Essential skills for consumer health in a networked world. *Journal of Medical Internet Research*, *8*(2), 506. https://doi.org/10.2196/jmir.8.2.e9

Rahdar, S., Montazeri, M., Mirzaee, M., & Ahmadian, L. (2023). The relationship between e-health literacy and information technology acceptance, and the willingness to share personal and health information among pregnant women. *International Journal of Medical Informatics*, *178*, 105203. https://doi.org/10.1016/j.ijmedinf.2023.105203

Şahin, E., Çatıker, A., Özdil, K., & Bulucu Büyüksoy, G. D. (2023). Predictors of eHealth literacy in pregnant women: A structural equation model analysis. *International Journal of Gynecology & Obstetrics*, *160*(3), 783–789. https://doi.org/10.1002/ijgo.14416

Shamim, A., Sharmin, M., Zannatul, N. M., & Shafi, U. B. (2019). Assessment of postnatal mothers' knowledge of newborn care practices: A cross-sectional study. *Journal of Community and Preventive Medicine*, *2*(1), 1–6.

Shekofteh, M., Ghaedi, R., Valizadeh-Haghi, S., & Baghestani, A. (2022). E-Health Literacy among Healthcare Students: The Effect of Demographic Variables. *Journal of Health Literacy*, *7*(2), 37–45. https://doi.org/10.22038/jhl.2022.62808.1257

Silva, M. P. C., Fonseca, L. M. M., Ruiz, M. T., Araújo, G. P. de, Rocha, J. B. do A., & Contim, D. (2023). Puerperal women's knowledge on newborn's body hygiene. *Revista Brasileira de Saúde Materno Infantil*, *23*, 1–8. https://doi.org/10.1590/1806-9304202300000187-en

Taşdemir, H. İ. (2022). Neonatal care needs of newborn mothers in the postpartum period: A phenomenological study. *Turkish Journal of Health Science and Life*, *5*(3), 230–236. https://doi.org/10.56150/tjhsl.1148867

Toksöz, F. (2023). Basic hygienic care needs of the healthy newborn after birth. *Hitit Medical Journal*, *5*(2), 117–121. https://doi.org/10.52827/hititmedj.1277925

Turgut, N., Güldür, A., Çakmakçı, H., Şerbetçi, G., Yıldırım, F., Ender Yumru, A., Bebek, A., & Gülova, S. S. (2017). A study

about knowledge level of pregnants that educated in pregnancy school. *Journal of Academic Research in Nursing*, *3*(1), 1–8. https://doi.org/10.5222/jaren.2017.001

Ünlü, V., & Cesur, B. (2023). Gebelik döneminde dijital sağlık okuryazarlığı. *Cumhuriyet Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, *8*(Special Issue), 370-374. https://doi.org/10.51754/cusbed.1345577

Uslu, F. Ş., & Purtul, S. (2023). Health anxiety and ehealth literacy as predictors of cyberchondria in women. *Acibadem Universitesi Saglik Bilimleri Dergisi*, *14*(3), 454-461. https://doi.org/10.31067/acusaglik.1285876

Vogels-Broeke, M., Daemers, D., Budé, L., de Vries, R., & Nieuwenhuijze, M. (2022). Sources of information used by women during pregnancy and the perceived quality. *BMC Pregnancy and Childbirth*, *22*(1), 109. https://doi.org/10.1186/s12884-022-04422-7

Wang, C., Wu, X., & Qi, H. (2021). A comprehensive analysis of e-health literacy research focuses and trends. *Healthcare*, *10*(1), 66. https://doi.org/10.3390/healthcare10010066

Yıldız, H., & Boyacı, B. (2019). Knowledge, needs and related factors of newborn care among postnatal mothers before discharge. *Mersin Üniversitesi Sağlık Bilimleri Dergisi*, *12*(1), 1–10. https://doi.org/10.26559/mersinsbd.396373