Expectant mothers' social media emotional support-seeking behavior

Philomina Pomaah Ofori[1], Thomas Henaku[2], Vered Asamoah[3]
[1]Department of Mobile and Pervasive Computing, Faculty of Computing and Information Systems,
Ghana Communication Technology University, Accra, Ghana
[2]Department of Information Systems, Faculty of Computing and Information Systems, Ghana Communication Technology University,
Accra, Ghana
[3]Surgical Department, Bono Regional Hospial, Sunyani, Ghana

Article Info

ABSTRACT

In developing countries, the use of digital media for health information by expectant mothers is a relatively new phenomenon, in contrast to developed countries. This study explores whether emotional support and satisfaction are linked and how they affect the use of social media for healthcare information. A non-experimental survey design was employed in this study. Expectant mothers were surveyed in five hospitals in Ghana's capital from May to August 2022 using a questionnaire. After reviewing and cleaning the data, 580 usable responses were obtained. The collected data were analyzed using SmartPLS 4 structural equation modeling. The findings of the study indicate that expectant mothers' decision to adopt digital media for health information is influenced by emotional support on social media (ESPSM) and satisfaction with social media (SATSM). Furthermore, satisfaction with social media partially mediated the effect between ESPSM and social media health information usage (SMHIU). These findings highlight the importance of emotional support and satisfaction with social media platforms in promoting digital health information usage. In particular, emotional support plays a crucial role for women, especially during pregnancy. These discoveries provide valuable insights for healthcare professionals on how best to assist expectant mothers.

Corresponding Author:

Philomina Pomaah Ofori
Department of Mobile and Pervasive Computing, Faculty of Computing and Information Systems,
Ghana Communication Technology University
PMB 100, Accra-North, Tesano, Ghana
Email: pofori12@outlook.com

1. INTRODUCTION

In recent years, mobile applications have emerged as a powerful tool for delivering services that can promote and enhance an active lifestyle [1]. The ubiquity and pervasiveness of social media have revolutionized the way individuals interact and obtain information [2]. Social media has emerged as a pervasive and powerful tool that has transformed the way individuals and organizations communicate with one another [3], [4]. The utilization and implementation of social media within the healthcare sector have garnered noteworthy interest from researchers across the globe [5]. The popularity of social media platforms has grown exponentially, with users relying on them to access a wide range of information, including health-related information [2]. These applications have transformed into decisive devices that enable individuals to access health and fitness-related services in a convenient and personalized manner [1]. The integration of social media into the healthcare landscape has introduced a novel facet to health communication, with the capacity to ameliorate health results and foster increased patient involvement [6].

These platforms have also had a profound impact on public health communication, providing a means for public health professionals to disseminate important information [7]. Social media platforms have revolutionized the way healthcare organizations communicate with patients and the wider community [6]. The ability of these platforms to facilitate communication, share information, and connect individuals has enabled healthcare providers to expand their reach and engage with patients [8]. Leveraging social media within healthcare provides a range of benefits, including increased accessibility to health-related information and resources, enhanced patient engagement, and improved communication between healthcare providers and patients [6].

The availability of health information on the internet has transformed the way women approach maternity care [9]. With easy access to a vast array of information on pregnancy and childbirth, pregnant women are now more empowered to take an active role in their healthcare decision-making [9]. Expectant mothers are increasingly turning to the internet, social media, and mobile applications to seek information regarding obstetrics and pediatrics [9]. This shows that health service sites are the most frequently used source of online health information by expectant mothers and are also perceived to be the most helpful and trustworthy [10]. Additionally, the use of digital health tools, such as smartphone applications, has enabled pregnant women to access a range of health-related services, including virtual consultations and remote monitoring, which can enhance the quality of care received [9]. A study shows that pregnant women frequently use the internet as a means of obtaining information for distinct motives and objectives [11]. The reviewed literature shows that expectant mothers continue to use digital media for various purposes.

Satisfaction with the interface design by users represents a holistic evaluation of the overall quality and utility of a digital product, emphasizing the importance of considering both design elements in promoting positive user experiences [12]. Through its function as a mediator, satisfaction helps to elucidate the causal pathways and mechanisms underlying various phenomena, making it a valuable tool for researchers seeking to deepen their understanding of human behavior and decision-making processes [13]–[17]. A study by Wexler *et al.* [18] underscores the importance of providing women with access to enhanced emotional support and targeted information resources in the postpartum period, as these interventions can help to mitigate the challenges and stressors commonly experienced during this critical phase of maternal health and promote positive outcomes for both mother and child [19]. Revealed that social support is needed for women. The present study has developed several hypotheses by synthesizing information from prior research and considering relevant factors. This study assesses emotional support on social media and the effect of digital satisfaction on digital media health information adoption.

H_1: Emotional support on social media will have a significant positive effect on social media healthcare information usage.

H_2: Emotional support on social media will have a significant positive effect on satisfaction with social media.

H_3: Satisfaction with social media has a significant positive effect on social media healthcare information usage.

H_4: Satisfaction with social media will mediate the relationship between emotional support on social media and social media healthcare information usage.

2. METHOD

The research adopted a descriptive cross-sectional methodology, which was conducted during the period spanning from May to August 2022, targeting a population of 5,000 expectant mothers in Ghana's capital city. Convenience sampling was chosen because it was anticipated that pregnant women would be readily accessible in various health centers. As suggested [20], it is appropriate to use a sample of 357 when the population is around 5,000. Notwithstanding, the sample size used was 580 participants across five hospitals: Police Hospital Accra, Trust Mother and Child, St. John's Hospital and Fertility Centre, Pentecost Hospital Madina, and Lekma Hospital. Although the sample size was adequate [20], the limitation of this effect was that the time for the study was reduced. The inclusion criteria were pregnant women registered at these hospitals receiving antenatal care who were 18 years of age or older. In the study, it was noticed that education can become a confounding variable. And the restrictions on pregnant women who participated in this study served to control this. In so doing, the study included only respondents who had the skills to read and write the English language. Ethical clearance was secured from the Ghana Health Service Ethics Review Committee (GHSERC:001/01/22), ensuring strict adherence to ethical principles. Participants voluntarily consented when they were assured of data confidentiality and anonymity in the survey. Data collection employed a questionnaire about demographic details, emotional support on social media (ESPSM), satisfaction with social media (SATSM), and social media healthcare information usage (SMHIU). All the items used for this study were adapted from previous studies. The measurement items employed in this study were derived from earlier research, following a rigorous and scholarly adaptation process. The items underwent a comprehensive validation process, ensuring their reliability and suitability for incorporation in this study. The items used to measure ESPSM were adapted from [21], SATSM from [22], and SMHIU from [23]. The authors employed

SmartPLS version 4 for the analysis. This study assessed the measurement model by critically assessing the average variance extracted (AVE) and the outer loadings, which check the convergent validity. It also checked the internal reliability of the constructs by assessing Cronbach's alpha (a) and composite reliability (CR). Again, discriminant validity was further checked by examining the heterotrait-monotrait ratio (HTMT). From the results, the outer loading ranges from 0.748 to 0.878. As indicated in Table 1, both Cronbach's alpha and composite reliability values exceeded the threshold of 0.7, a testament to their robust internal consistency. Furthermore, the average variance extracted (AVE) values exceeded the benchmark of 0.5, underscoring the construct validity of the measures utilized in this study. These results indicate that the questionnaire used in the study was valid and reliable. The results show that HTMT values were <1, which met the recommended threshold suggested by Hair *et al.* [24]. Figure 1 shows the path results of the constructs.

Table 1. Measurement model findings

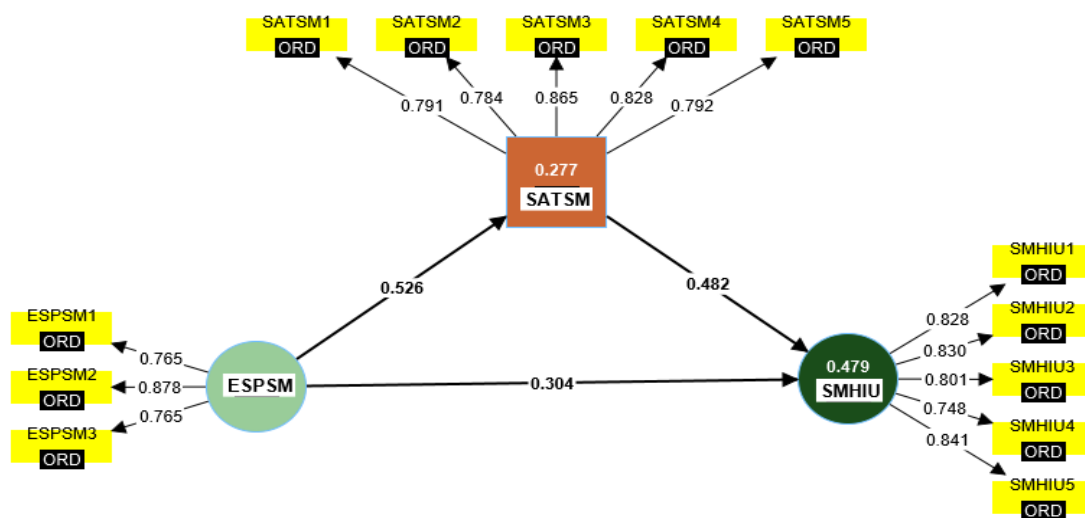| Constructs	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)	Path	Heterotrait-monotrait ratio (HTMT)
ESPSM	0.844	0.851	0.647	SATSM->ESPSM	0.528
SATSM	0.906	0.908	0.660	SMHIU->ESPSM	0.556
SMHIU	0.906	0.907	0.657	SMHIU->SATSM	0.641

Figure 1. Measurement model findings

3. RESULTS AND DISCUSSION
3.1. Results

The demographic findings furnish valuable insights into the cohort of pregnant women engaged in this study, shedding light on critical factors such as their age distribution, stage of pregnancy, and educational qualifications. This information provided diversity among the respondents. The results indicate a prevalent trend among respondents, with a significant majority falling within the age bracket of 26 to 30 years, and the other, greater group was between 31 and 40 years. This shows that most of them have advanced in age and are concerned about their health during this critical period. Again, since 246 respondents had a high school education, it shows that they are keen to learn to protect themselves and their unborn babies. Table 2 for the general details.

3.1.1. Structural model findings

To assess the structural model, collinearity issues must be checked. This was done by assessing the variance inflation factor, and all the latent variables were less than 3 as presented in Table 3. Using the bootstrap method, the hypotheses were assessed to check the significance of the model. As shown in Table 3, the ESPSM effect on SMHIU was significantly positive (β=0.304, t=12.521, p<.000). Again, ESPSM significantly correlated with SATSM (β=0.526, t=12.054, p<.000), and the SATSM effect on SMHIU was positively significant (β=0.482, t=8.738, p<.000). All the hypotheses (H1-H3) were supported. Coefficients of determination were also checked, and the R^2 for SATSM was 0.277 and that for SMHIU was 0.479. The results show that R^2 are weak and moderate, as suggested by [24]. The predictive relevance was further checked using Q^2, and the values were

greater than 0 indicating a medius predictive accuracy [24]. The common approach bias was evaluated using variance inflation factors (VIF). A VIF value greater than 3.3 suggests the existence of collinearity. The obtained values varied between 1.000 and 1.383, indicating the absence of multicollinearity as shown in Table 3.

Table 2. Results of demographic characteristic, n=580

Variables	Category	Frequency	Percentage (%)
Age group	18-25	107	18
	26-30	260	45
	31-40	207	36
	41 and above	6	1
	Total	580	100
Educational level	High school	246	42
	Diploma	119	21
	Degree	177	31
	Postgraduate	19	3
	Other	19	3
	Total	580	100
Pregnancy stage	1st Trimester	151	26
	2nd Trimester	224	39
	3rd Trimester	205	35
	Total	580	100

Table 3. Structural model findings

Hypothesis	Path	Beta	T statistics	p-values	Decision	VIF
H1	ESPSM->SMHIU	0.304	12.521	0.000	Supported	1.383
H2	ESPSM->SATSM	0.526	12.054	0.000	Supported	1.000
H3	SATSM->SMHIU	0.482	8.738	0.000	Supported	1.383
Coefficient of determination and predictive relevance						
Constructs		R-square			Q² predict	
SATSM		0.277			0.208	
SMHIU		0.479			0.233	

3.1.2. The mediating effect findings

Table 4 shows the results of the direct and indirect effects of ESPMS. Both the direct effect (t=12.521, p=<.000) and indirect effect (t=7.244, p=<.000) of ESPSM on SMHIU were significant, which indicates a partial mediation. The results reveal that, in as much as ESPSM has a significant impact on SMHIU, the presence of SATSM has a greater effect on the relationship between ESPSM and SMHIU.

Table 4. The mediating effect findings

Hypothesis	Direct path relations	T-stat	p-value	Direct Sign	Indirect Path relations	Indirect effect	p-value	Indirect sign	Mediation
H4	ESPSM->SMHIU	12.521	0.000	Yes	ESPSM->SATSM->SMHIU	7.244	0.000	Yes	Partial

3.2. Discussion

The findings show that emotional support on social media significantly shapes expectant mothers' choices regarding the utilization of social media for healthcare information and has a pronounced influence, aligning with the underpinning hypothesis (H1). The results suggest that pregnant women rely on digital platforms for psychological support when they do not receive adequate emotional support from their close family members or healthcare providers. The provision of emotional support on social media platforms was found to be crucial in encouraging pregnant women to adopt digital health information. The findings are consistent with previous research, which has demonstrated the positive impact of social support on healthcare outcomes [25]. The results suggest that pregnant women are more likely to be satisfied with using social media for health information when they receive emotional support through these platforms.

Furthermore, the current study highlights the significant impact of ESPSM on SATSM. The findings revealed that ESPSM positively and significantly affects SATSM, which supports H2. The empirical findings of this research underscore that the level of system satisfaction plays a significant role in the adoption of digital health information among expectant mothers. The outcome of this study supports similar research in another

field [26], [27]. The results suggest that pregnant women are more likely to utilize digital platforms that are tailored to meet their specific needs and preferences and that possess a user-friendly design that provides appropriate pregnancy information. Therefore, it is crucial for digital health developers to consider the needs and preferences of expectant mothers when designing digital health platforms to ensure their satisfaction and subsequent adoption of the platform.

The results pertaining to Hypothesis 3 reveal that SATSM exerts a notable influence on SMHIU. This significant effect observed underscores the support for Hypothesis (H3). It is worth noting that the current findings contradict previous work [28]. The study also found that satisfaction with social media has a favorable effect on SMHIU, which is evident in the adoption of digital platforms for health information. This finding supports another study [29]. The results imply that pregnant women who are satisfied with social media platforms are more likely to continue using them to obtain pregnancy-related information.

This study again investigated the role of SATSM in mediating the relationship between ESPSM and SMHIU among pregnant women. The results show that SATSM partially mediates the relationship between ESPSM and SMHIU, which supports the hypothesis (H4). The results align with previous studies in different fields [17], [30], where satisfaction was used as a mediator. The results indicate that satisfaction with social media is vital in mediating the relationship between ESPSM and SMHIU. The study found that satisfaction with social media has a greater impact on pregnant women's decision to adopt SMHIU while they receive emotional support on social media. This implies that pregnant women who need emotional support exhibit a heightened propensity to engage with digital platforms that offer this support when the platforms being used have a user-friendly interface and provide the right information, which provides knowledge benefits for pregnant women. This study had some limitations, which are highlighted for further research to advance the current findings. One limitation of this study is its sample selection, as it only includes pregnant women who have access to digital devices and the internet. It is essential to broaden the study's scope to include expectant mothers who do not have such opportunities to better understand the role of digital systems in healthcare information dissemination for all pregnant women.

4. CONCLUSION

The present research undertook a pioneering investigation into the utilization of social media as a means of acquiring healthcare information among expectant women in Ghana. This study underscores the importance of emotional support as a key driver for pregnant women's adoption of digital platforms for healthcare information. When pregnant women feel supported emotionally through social media, they are more likely to utilize these platforms for accessing health-related content. This implies that healthcare providers can leverage social media channels to provide the necessary emotional support to pregnant women, thereby increasing their inclination towards using digital health information.

REFERENCES

[1] T. Saheb, "An empirical investigation of the adoption of mobile health applications: integrating big data and social media services," *Health and Technology*, vol. 10, no. 5, pp. 1063–1077, Sep. 2020, doi: 10.1007/s12553-020-00422-9.

[2] P. P. Ofori and W. Wang, "Emerging technologies adoption in healthcare: A SOHI model," *Information Development*, pp. 1–19, 2022, doi: 10.1177/02666669221113766.

[3] H. Tsai, Y. P. Lee, and A. Ruangkanjanases, "Understanding the effects of antecedents on continuance intention to gather food safety information on websites," *Frontiers in Psychology*, vol. 11, no. December, pp. 1–10, Dec. 2020, doi: 10.3389/fpsyg.2020.579322.

[4] J. C. Wilson, "Using Social Media for Breastfeeding Support," *Nursing for Women's Health*, vol. 24, no. 5, pp. 332–343, 2020, doi: 10.1016/j.nwh.2020.07.003.

[5] T. Walker, C. Palermo, K. Klassen, and T. Walker, "Considering the impact of social media on contemporary improvement of Australian Aboriginal health: Scoping review," *Journal of Medical Internet Research*, vol. 21, no. 2, pp. 1–8, 2019, doi: 10.2196/11573.

[6] P. Gupta, A. Khan, and A. Kumar, "Social media use by patients in health care: A scoping review," *International Journal of Healthcare Management*, vol. 0, no. 0, pp. 1–11, 2020, doi: 10.1080/20479700.2020.1860563.

[7] F. Guerra *et al.*, "The use of social media for professional purposes by healthcare professionals : the # intEHRAct survey," *European Society of Cardiology*, vol. 24, pp. 691–696, 2022, doi: 10.1093/europace/euab244.

[8] S. Zilber, S. Monken, and F. Quevedo-Silva, "Adoption of social media by small- And medium-sized healthcare enterprises," *Brazilian Business Review*, vol. 16, no. 5, pp. 453–469, 2019, doi: 10.15728/bbr.2019.16.5.3.

[9] F. Alamer and T. Al-Edreese, "Pregnant women utilization of internet and social media for health education In Saudi Arabia: a thematic analysis," *Journal of Health Informatics in Developing Countries*, vol. 15, no. 1, p. 2021, 2021.

[10] M. Sinclair, B. M. Lagan, H. Dolk, and J. E. M. M. Mccullough, "An assessment of pregnant women's knowledge and use of the Internet for medication safety information and purchase," *Journal of Advanced Nursing*, vol. 74, no. 1, pp. 137–147, 2018, doi: 10.1111/jan.13387.

[11] R. Rezaee, R. Ravangard, F. Amani, and A. D. Tafti, "Healthy lifestyle during pregnancy : Uncovering the role of online health information seeking experience," *PLOS ONE*, pp. 1–13, 2022, doi: 10.1371/journal.pone.0271989.

[12] J. C. Hong, K. H. Tai, M. Y. Hwang, Y. C. Kuo, and J. S. Chen, "Internet cognitive failure relevant to users' satisfaction with content and interface design to reflect continuance intention to use a government e-learning system," *Computers in Human Behavior*, vol. 66, pp. 353–362, 2017, doi: 10.1016/j.chb.2016.08.044.

[13] M. S. Dinc, C. Kuzey, and N. Steta, "Nurses' job satisfaction as a mediator of the relationship between organizational commitment components and job performance," *Journal of Workplace Behavioral Health*, vol. 33, no. 2, pp. 75–95, 2018, doi: 10.1080/15555240.2018.1464930.

[14] S. Djelassi, M. F. Diallo, and S. Zielke, "How self-service technology experience evaluation affects waiting time and customer satisfaction? A moderated mediation model," *Decision Support Systems*, vol. 111, pp. 38–47, Jul. 2018, doi: 10.1016/j.dss.2018.04.004.

[15] J. K. Fatima, R. Di Mascio, and R. Johns, "Impact of relational benefits on trust in the Asian context: Alternative model testing with satisfaction as a mediator and relationship age as a moderator," *Psychology & Marketing*, vol. 35, no. 6, pp. 1–11, Jun. 2018, doi: 10.1002/mar.21097.

[16] M. Satoh, I. Watanabe, and K. Asakura, "Occupational commitment and job satisfaction mediate effort–reward imbalance and the intention to continue nursing," *Japan Journal of Nursing Science*, vol. 14, no. 1, pp. 49–60, Jan. 2017, doi: 10.1111/jjns.12135.

[17] A. M. Rawashdeh, M. Elayan, M. D. Shamout, and M. H. Saleh, "Job satisfaction as a mediator between transformational leadership and employee performance: Evidence from a developing country," *Management Science Letters*, vol. 10, no. 16, pp. 3855–3864, 2020, doi: 10.5267/j.msl.2020.7.026.

[18] A. Wexler *et al.*, "Pregnancy and health in the age of the Internet: A content analysis of online 'birth club' forums," *PLoS ONE*, vol. 15, no. 4, pp. 1–15, 2020, doi: 10.1371/journal.pone.0230947.

[19] M. Fikri, N. Neviyarni, and A. Afdal, "The relationship between family support system with maternal postpartum rage," *International Journal of Public Health Science (IJPHS)*, vol. 12, no. 1, pp. 339–347, 2023, doi: 10.11591/ijphs.v12i1.22011.

[20] W. G. Cochran, *Sampling Techniques*, 3rd Ed. United States of America: John Wiley & Sons, Inc., 1977.

[21] Z. Yao, P. Tang, J. Fan, and J. Luan, "Influence of online social support on the public's belief in overcoming COVID-19," *Information Processing and Management*, vol. 58, no. January, 2020.

[22] X. Lin, X. Wang, and N. Hajli, "Building e-commerce satisfaction and boosting sales : the role of social commerce trust and its antecedents antecedents," *International Journal of Electronic Commerce*, vol. 23, no. 3, pp. 328–363, Jul. 2019, doi: 10.1080/10864415.2019.1619907.

[23] I. Puspitasari and A. Firdauzy, "Characterizing consumer behavior in leveraging social media for e-patient and health-related activities," *International Journal of Environmental Research and Public Health*, vol. 16, no. 18, pp. 3–5, 2019, doi: 10.3390/ijerph16183348.

[24] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," *European Business Review*, vol. 31, no. 1, pp. 2–24, Jan. 2019, doi: 10.1108/EBR-11-2018-0203.

[25] H. Y. Wu and A. F. Chiou, "Social media usage, social support, intergenerational relationships, and depressive symptoms among older adults," *Geriatric Nursing*, vol. 41, no. 5, pp. 615–621, 2020, doi: 10.1016/j.gerinurse.2020.03.016.

[26] N. M. St. Vil, "A Culture of Mutual Support: The impact of giving and receiving of practical and emotional support on african american marital satisfaction," *Journal of Family Social Work*, vol. 18, no. 2, pp. 78–89, 2015, doi: 10.1080/10522158.2014.981909.

[27] S. F. G. Ganji and L. W. Johnson, "The relationship between family emotional support, psychological capital, female job satisfaction and turnover intention," *International Journal of Economics, Business and Management Studies*, vol. 7, no. 1, pp. 59–70, 2020, doi: 10.20448/802.71.59.70.

[28] X. Fu and Z. Juan, "Understanding public transit use behavior: integration of the theory of planned behavior and the customer satisfaction theory," *Transportation*, vol. 44, no. 5, pp. 1021–1042, 2017, doi: 10.1007/s11116-016-9692-8.

[29] R. A. Silver, C. Subramaniam, and A. Stylianou, "The impact of portal satisfaction on portal use and health-seeking behavior: Structural equation analysis," *Journal of Medical Internet Research*, vol. 22, no. 3, pp. 1–13, 2020, doi: 10.2196/16260.

[30] Z. Tang, C. Ye, Z. Fu, J. Zhang, and Z. Gong, "Primary medical and health preparedness and people's life satisfaction in China: The mediating role of satisfaction with medical and health services," *Frontiers in Public Health*, vol. 11, no. 13, 2023, doi: 10.3389/fpubh.2023.1037574.

BIOGRAPHIES OF AUTHORS

Philomina Pomaah Ofori [ID] [GS] [SC] [ORCID] is a lecturer at Ghana Communication Technology University. She holds a PhD in Management Science and Engineering from Jiangsu University, China. Her research interest is in digital healthcare and emerging healthcare technologies. Her peer-reviewed articles have focused on social media healthcare, and digital health information. She can be contacted at email: pofori12@outlook.com.

Thomas Henaku [ID] [GS] [SC] [ORCID] is a Systems Analyst/Lecturer at Ghana Communication Technology University. His current research interest is in exploring digitization scenarios and their impact on organizational achievements. He has research publications in the area of Cloud Computing for Health Care Delivery, Assistive Learning for Children with Autism and First Graders. His teaching interest include Management Information Systems, Systems Analysis & Design, Human Computer Interaction, IT Law, and Internet & Information Security. He can be contacted at email: thenaku@gctu.edu.gh.

Vered Asamoah ⓘ 🔗 SC ◗ is a senior nursing officer at Sunyani Regional Hospital. She is a highly motivated and enthusiastic nursing professional with nine years of experience. Her work in various units, such as the medical, surgical, and emergency departments, has enlightened and sharpened her nursing skills. Ms. Vered holds a nursing degree from the University for Development Studies (2013). She can be contacted at email: veredasamoah@gmail.com.