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Effects of social networking service self-efficacy and perceived usefulness on depression among people with disabilities

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Objectives: Social networking services (SNS) are increasingly recognized as digital health resources that may influence psychological well-being. This study examined whether SNS use, SNS self-efficacy, and SNS perceived usefulness were associated with depression among people with disabilities. **Methods:** Data were obtained from the 2022 Panel Survey of the Life of People with Disabilities in Korea. The analytic sample included 4,145 adults aged 20 years or older with complete responses. Depression was measured with the CES-D 11 scale. Chi-square tests and t-tests compared characteristics by SNS use, and multivariate logistic regression examined associations of SNS use, self-efficacy, and perceived usefulness with depression, adjusting for sociodemographic and disability-related covariates. **Results:** Of 4,145 participants, 509 (12.3%) were SNS users. SNS use was not significantly associated with depression. However, higher SNS self-efficacy and SNS perceived usefulness were associated with a lower risk of depression (*aOR*=0.89, 95% CI: 0.81–0.98; *aOR*=0.91, 95% CI: 0.83–1.00). Subgroup analysis indicated an inverse association between SNS self-efficacy and depression only among participants with physical disabilities. **Conclusion:** Digital capacity and confidence, rather than SNS use alone, are key determinants of mental health among people with disabilities. Tailored digital literacy programs that address disability-specific needs may strengthen self-efficacy, reduce depression, and promote digital health equity.

Key words: people with disabilities, SNS self-efficacy, SNS perceived usefulness, depression, digital determinants of health

Ⅰ. Introduction

As contemporary society enters an information-oriented era, social service-related information is increasingly provided through internet environments (H. Y. Jung, 2023). The internet now serves as a major source of health information, and health information obtained online directly influences individuals' health behaviors and health outcomes (Kye & Park, 2018). Interactive media and digital healthcare are expected to have ongoing, positive, and measurable effects on medical services at a faster rate than previous information technologies and communication tools (National Rehabilitation Center, 2021).

As of 2023, when the digital information competency level of the non-disabled population is set at 100, individuals with disabilities have a competency level of only 75.6% (National Information Society Agency, 2023). This shows that, as digital environments expand, the digital divide between non-disabled and disabled

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populations has widened. The extent to which individuals with disabilities use information can significantly affect their life satisfaction (J.-H. Hwang, 2019). In addition to digital device usage competency and digital citizenship competency, demographic and sociological factors, disability-related factors, social capital, and psychological factors have also been reported to influence life satisfaction (Moon et al., 2021). Digital information use and the level of digital information competency may affect health, and the digital divide may result in insufficient health information, placing existing health-disadvantaged groups at risk of double jeopardy (Choi & Kim, 2022).

Sociodemographic, economic, and political factors that influence interactions between individuals and digital health systems are defined as the Social Determinants of Health (SDOH). More recently, the interactions among the design, implementation, and use of digital technologies have been defined as the Digital Determinants of Health (DDOH). DDOH seek to make healthcare more affordable, accessible, and high quality, and the introduction of technological elements is conceptualized as increasing consumers' participation in and experiences with healthcare (Chidambaram et al., 2024). When digital technologies are used at the interpersonal level, greater interdependence within social networks tends to promote positive health behaviors, and developing digital literacy competencies can increase digital self-efficacy (Richardson et al., 2022). In practice, interactive digital health programs, such as the mental health self-diagnosis applications Masung's Todak-Todak and Stress Is Gone, have been shown to support early detection and prevention of mental illness, reduce clinical symptoms of depression and anxiety, address dysfunctional thinking, and relieve emotional and psychological stress (National Rehabilitation Center, 2021). However, individuals with disabilities are relatively disadvantaged compared to non-disabled populations regarding economic circumstances, digital competency, and accessibility, which has resulted in social isolation within communities (Korea Disabled People's Development Institute [KODDI], 2022). As a result, digital exclusion and socioeconomic marginalization may increase.

In this context, interactive media platforms such as social networking services (SNS) play essential roles in information exchange, communication, and participation in social activities (Boyd & Ellison, 2007; J. Kim et al., 2012; S. Lee, 2013). They support the creation of perceived interactive value, the development of human networks, and free interaction (D. Jung et al., 2017; Ko, 2022). SNS also provides access to medical resources, including medical knowledge, information, and professional consultation (Fan & Zhao, 2022). Individuals process health information by discovering, understanding, and evaluating it, forming a cyclical loop that helps transform knowledge into concrete health-related behaviors (M. Hwang & Park, 2021). The digital environment is an important factor influencing health, and recent research shows that SNS activities among individuals with disabilities indirectly affect life satisfaction through self-esteem and depression as mediating variables (S. Kim & Roh, 2022).

Individuals with disabilities generally report higher levels of depression and lower levels of life satisfaction compared to non-disabled populations, and depression may increase because of sociodemographic factors such as lower socioeconomic status and declines in physical, psychological, and social functioning (D. M. Kim, 2023). Reduced social support and experiences of discrimination related to disability can both contribute to and result from depression (Jeon, 2010; M.-S. Kim & Seo, 2019). In this context, the use of social networking services (SNS) has been proposed as a way to reduce negative emotions, such as depression and low life satisfaction, among

individuals with disabilities. Research shows that individuals with disabilities who use SNS report lower depression and higher life satisfaction than those who do not use SNS, suggesting that both the presence and extent of SNS use are associated with significant differences in depression and life satisfaction in this population (Y. E. Lee & Hwang, 2023).

The extent of SNS use is typically measured by two dimensions: "SNS self-efficacy" and "SNS perceived usefulness." SNS self-efficacy refers to confidence in one's ability to perform specific tasks, which influences information technology adoption and contributes to motivation and performance (D. Kim, 2022). SNS perceived usefulness refers to the extent to which individuals believe that adopting information technology will benefit them (D. Jung et al., 2017; Lee et al., 2012). This perception can affect both the use of health information and experiences of social support.

Previous studies have shown that SNS self-efficacy and perceived usefulness are associated with the management of chronic inflammation related to chronic diseases such as cancer, diabetes, and cardiovascular disease (CVD) (Fan & Zhao, 2022). Securing greater social support through SNS can positively influence both SNS self-efficacy and general self-efficacy, which contributes to improvements in individual behaviors and cognitions (Li et al., 2022; Loh et al., 2023). Among adolescents, appropriate SNS use supports peer interaction, the formation of supportive networks, increased social inclusion, healthier dietary habits, and higher levels of physical activity (Shimoga et al., 2019). For individuals beyond adolescence, SNS use has also been shown to motivate engagement in physical activity, a key preventive factor against chronic disease (Alhusseini, 2020).

Many studies examining depression beyond overall health have found negative correlations in non-disabled populations. For example, groups using social networking services (SNS) for interpersonal reasons are more likely to experience depression than those using SNS for information acquisition or entertainment (Yoon & Kim, 2018). Research on individuals with disabilities has produced mixed results. Some studies report that SNS activities increase self-esteem and reduce depressive symptoms, while others suggest a cyclical relationship in which depressive symptoms negatively affect perceptions of SNS, which then influence depression (S. Kim & Roh, 2022; Y. J. Lee & Kim, 2025). The effects of SNS on depression therefore vary depending on the user and context. Previous research also shows that individuals with severe disabilities are more likely to be non-users of SNS than those with mild disabilities (M. Hwang & Min, 2025), and that SNS usage patterns differ by disability type, highlighting the need for tailored approaches based on disability characteristics (Y. E. Lee & Hwang, 2023). These findings indicate that such differences exist across disability types.

Digital competency in an information society can influence both physical and mental aspects of overall health. SNS use may support communication and benefit mental health, but it can also harm mental health through social comparison. The level of SNS self-efficacy and perceived usefulness, which reflect an individual's ability to use and manage SNS, may change how SNS affects mental health. This study examines how SNS self-efficacy and perceived usefulness relate to depression, a proxy indicator of mental health, and analyzes the role of SNS in the current digital era.

Ⅱ. Methods

1. Research design

This study used cross-sectional data from the 2022 Panel Survey on the Life of Persons with Disabilities

and conducted a secondary data analysis to examine SNS use and mental health among adults with disabilities. Depression served as the dependent variable. The primary independent variables were SNS use, SNS self-efficacy, and SNS perceived usefulness. The analysis controlled for sociodemographic factors (age group, gender, educational attainment, employment status, residential area), disability-related factors (type and severity of disability), the presence of assistance in daily living, and social support scores to assess the relationship between SNS use and depression.

2. Data and study population

This study used data from the 2022 Panel Survey on the Life of Persons with Disabilities to examine the association between SNS use and mental health among adults with disabilities aged 20 years and older. The survey, a nationally approved statistical study, assesses the quality of life and welfare conditions of individuals with disabilities in Korea. Each wave follows standardized procedures, including expert consultation and item-by-item review, to ensure comprehension, response feasibility, and conceptual validity (KODDI, 2022). The items on SNS self-efficacy and perceived usefulness in this study were official survey items developed through standardized procedures, providing reliable data (KODDI, 2022). To ensure representativeness across disability types, the panel survey used sampling strategies that included rare disability types with low population proportions, preventing their exclusion from the sample (KODDI, 2022). However, the data set has limitations because the number of respondents reporting SNS use was relatively small for some disability groups, especially those with mental and developmental disabilities, which restricted sample sizes for analysis (KODDI, 2022). In the first wave of the survey in 2018, 6,121 individuals responded; in the fifth wave in 2022, 4,904 individuals participated. Of the total panel (6,121), 1,217 were non-respondents, including 188 cases with missing employment status data.

For this study, individuals younger than 20 years (n=759) were excluded. The final analytic sample included 4,145 adults with complete responses on SNS use and the study's key variables. Among these, 509 individuals (12.3%) were identified as SNS users, and subgroup analyses were conducted for this group.

3. Variable definitions

1) Independent variables

To define SNS use, individuals who reported using Facebook, KakaoStory, Instagram, Band, Twitter, or other SNS platforms were classified as "users," and those who did not were classified as "non-users." In this study, the measures of SNS self-efficacy and SNS perceived usefulness from the Panel Survey on the Life of Persons with Disabilities showed Cronbach's α values of 0.934 and 0.899, respectively, confirming their reliability as measurement instruments (H.-J. Lee et al., 2012). These constructs are consistently used as common definitions in research on SNS use among individuals with disabilities (M. H. Han, 2024).

SNS self-efficacy was measured with four items: "I am confident in engaging in SNS activities," "I am confident in utilizing SNS functions," "I am confident in understanding terms used in SNS," and "I am confident in communicating with others through SNS." Participants responded on a four-point Likert scale from 1 ("strongly disagree") to 4 ("strongly agree"). The total score ranged from 4 to 16 and was treated as a continuous variable.

SNS perceived usefulness was measured with five items: "SNS will provide convenience in my daily life," "I can obtain diverse information through SNS," "I can effectively communicate with many people through SNS," "I can quickly find desired information through

SNS," and "Overall, I think SNS is useful." Participants rated each item on a four-point Likert scale (1="strongly disagree" to 4="strongly agree"). Summed scores ranged from 5 to 20 and were treated as a continuous variable.

2) Dependent variables

This study used "depression status" as the primary dependent variable. Depression was defined based on the Center for Epidemiologic Studies Depression Scale (CES-D) developed by Radloff (1977). The CES-D, originally intended for epidemiological research, is now widely used as a depression screening tool. The Standard Guidelines for Mental Health Screening Tools and Use (National Center for Mental Health, 2020) and the Korea Disease Control and Prevention Agency (2020) set the cutoff score at 16. This threshold shows a sensitivity of 86.7 and a specificity of 76.6 for identifying individuals with depressive disorders, supporting its use for depression detection (Siddaway et al., 2017). In this study, respondents who scored 16 or higher on the 11 CES-D items were classified as "depressed," and those who scored below 16 were classified as "not depressed."

3) Covariates

The analysis controlled for the following variables: gender, age group, residential area, marital status, disability severity, educational attainment, employment status, presence of assistance in daily living, and social support score. Gender was classified as male or female. Age group included three categories: young adults (20–39 years), middle-aged adults (40–59 years), and older adults (60 years and above). Residential area was categorized as metropolitan or non-metropolitan. Marital status was divided into "married" and "non-married," with the non-married group including single, divorced, separated, and widowed individuals.

Disability was classified into four types. Physical disabilities included mobility impairments, brain lesions, and facial impairments (n=1,392). Sensory and communication disabilities included visual, hearing, and speech impairments (n=1,273). Internal organ disabilities included kidney, heart, liver, respiratory, ostomy, and epilepsy-related impairments (n=973). Developmental and mental disabilities included intellectual disabilities, psychiatric disabilities, and autism spectrum disorders (n=507).

Disability severity was categorized as severe or mild. Educational attainment was classified by the highest level completed: elementary school or below, middle school, high school, and college or above (including junior college, university, and graduate school). Employment status was coded as "employed" or "unemployed." Assistance in daily living was categorized as "no assistance" or "assistance available." Social support score was measured using the Emotional Support and Assistance scale, which included three items assessing emotional support received from family, friends, and social workers. Each item was rated on a four-point Likert scale (1="strongly disagree" to 4="strongly agree"), and the summed scores ranged from 4 to 12, treated as a continuous variable.

4. Data analysis

We compared differences in general characteristics and depression by SNS use using cross-tabulation and independent samples t-tests. For the SNS user group, we used one-way analysis of variance (ANOVA) to compare mean differences in health variables by levels of SNS self-efficacy and perceived usefulness. We also conducted multivariate logistic regression analysis to examine the effect of SNS use on depression. Within the SNS user group, we further analyzed the effects of self-efficacy and perceived usefulness. The regression models included controls for gender, age group, residential area, marital status, disability type,

disability severity, educational attainment, employment status, presence of assistance in daily living, and social support score.

Subgroup analyses by disability type used multivariate logistic regression to assess the impact of SNS use on depression. Within the SNS user group, the effects of self-efficacy and perceived usefulness were also examined. All analyses used Python-based libraries, including statsmodels, scipy, pandas, and statsmodels.formula.api.

5. Research ethics

This study was exempted from review by the Institutional Review Board of the Ministry of Health and Welfare (Exemption Approval Number: P01-202506-01-031).

Ⅲ. Results

1. Comparison of general characteristics by SNS use among individuals with disabilities

The comparison of general characteristics by SNS use among individuals with disabilities showed the following patterns. In the SNS user group, males accounted for 58.4% and females for 41.7%, while the non-user group had a more balanced gender distribution (males 53.4%, females 46.6%). Age group analysis indicated that SNS users were mainly young adults (20–39 years, 35.0%) and middle-aged adults (40–59 years, 38.3%). In contrast, non-users were primarily older adults (60 years and above, 59.0%).

Regarding residential area, SNS users were more likely to live in non-metropolitan regions (55.8%), while non-users were almost evenly split between metropolitan (49.3%) and non-metropolitan areas (50.7%). Marital status data showed a higher proportion of single, divorced, separated, or widowed individuals among SNS users (49.5%). The type of disability also differed: sensory disabilities were more common among non-users, whereas internal organ disabilities were slightly more frequent among users. Disability severity varied as well, with severe disabilities more common among non-users (50.0%) and mild disabilities more common among users (58.4%). Educational attainment differed notably: 41.7% of SNS users had a college education or higher, while 41.0% of non-users had only elementary or middle school education. Employment status also varied: 49.5% of SNS users were employed, compared to 23.8% of non-users. Assistance with daily living was slightly more common among SNS users (37.3%). Social support scores were significantly higher for SNS users (*mean*=8.02) than for non-users (*mean*=7.71, p=.001) 〈Table 1〉.

Regarding depression, SNS users reported a lower prevalence (29.86%) than non-users (41.47%) (p<.001). Among individuals with disabilities, the likelihood of SNS use was higher for those living in non-metropolitan areas, married individuals, those with severe disabilities, employed individuals, and those with at least a high school education. In contrast, the likelihood was lower for middle-aged and older adults, as well as for individuals with sensory, mental, or developmental disabilities. Specifically, compared to young adults, middle-aged and older adults were 0.22 and 0.12 times as likely to use SNS, respectively (p<.001). Non-metropolitan residents were 1.24 times more likely to use SNS than metropolitan residents (p=.042). Married individuals were 1.33 times more likely to use SNS than single, divorced, separated, or widowed individuals (p=.022). Individuals with visual or hearing disabilities and those with mental or developmental disabilities were 0.73 and 0.45 times less likely, respectively, to use SNS than those with physical disabilities (p<.05). Severe disabilities were associated with a 1.43 times higher likelihood of SNS use

〈Table 1〉 General characteristics by SNS use among people with disabilities (2022, n=4,145)

Unit: n (%)

		Non-users of SNS	Users of SNS	Chi-square test or t-test
				p-value
Sex	Men	1,943 (53.4)	297 (58.3)	.042
	Women	1,693 (46.6)	212 (41.7)	
Age group	Young adults (20-39 years old)	326 (9.0)	178 (35.0)	<.001
	Middle-aged adults (40-59 years old)	1,166 (32.1)	195 (38.3)	
	Older adults (60 years old or older)	2,144 (59.0)	136 (26.7)	
Residential area	Metropolitan area	1,794 (49.3)	225 (44.2)	.034
	Non-metropolitan area	1,842 (50.7)	284 (55.8)	
Marital status	Unmarried, Divorced, Separated, Widowed	1,682 (46.3)	252 (49.5)	.184
	Married	1,954 (53.7)	257 (50.5)	
Type of disability	Physical disabilities	1,212 (33.3)	180 (35.4)	.073
	Visual and hearing impairments	1,139 (31.3)	134 (26.3)	
	Internal organ disabilities	837 (23.0)	136 (26.7)	
	Mental and developmental disabilities	448 (12.3)	59 (11.6)	
Severity of disability	Severe disabilities	1,818 (50.0)	212 (41.7)	<.001
	Mild disabilities	1,818 (50.0)	297 (58.4)	
Education level	Elementary school or less	786 (21.6)	15 (3.0)	<.001
	Middle school graduate	706 (19.4)	35 (6.9)	
	High school graduate	1,581 (43.5)	247 (48.5)	
	College graduate or higher	563 (15.5)	212 (41.7)	
Employment status	Unemployed	2,772 (76.2)	257 (50.5)	<.001
	Employed	864 (23.8)	252 (49.5)	
Assistance with daily living	With assistance	1,259 (34.6)	190 (37.3)	.251
	Without assistance	2,377 (65.4)	319 (62.7)	
Social support score (3-12 points, *Mean*±*SD*)		7.71±2.02	8.02±2.03	.001
Depression[1)]		1,508 (41.5)	152 (29.9)	<.001
Total		3,636 (100.0)	509 (100.0)	.001

Notes. [1)] Depression was measured using the abbreviated CES-D scale (CES-D 11: The Center for Epidemiologic Studies Depression Scale). The score distribution ranged from 0 to 60, and a score of 16 or higher was defined as "depression."

compared to mild disabilities (p=.003). Employed individuals were 2.47 times more likely to use SNS than unemployed individuals (p<.001), and those with a high school education or above were 3.79 times more likely to use SNS than those with less than a high school education (p<.001) 〈Appendix table 1〉.

2. SNS use, self-efficacy, and perceived usefulness by disability type

Among all SNS users with disabilities, the mean SNS self-efficacy score was 11.33 (±2.38), and the mean perceived usefulness score was 15.03 (±2.29). By disability type, the following results were found. For individuals with physical disabilities (n=1,392), 12.9% used SNS, with mean SNS self-efficacy and perceived usefulness scores of 11.25 and 14.99, respectively. For those with visual and hearing disabilities (n=1,273), the proportion of SNS users was lowest at 10.5%, with mean scores of 11.37 for SNS self-efficacy and 15.13 for perceived usefulness. Among individuals with

〈Table 2〉 Comparison of SNS use, SNS self-efficacy, and perceived usefulness of SNS by types of disability

Unit: *n* (%) or *Mean*±*SD*

		Total Total (*n*=4,145)	Physical disabilities (*n*=1,392)	Visual and hearing impairments (*n*=1,273)	Internal organ disabilities (*n*=973)	Mental and developmental disabilities (*n*=507)	*p*-value[3]
SNS use rate[1]	Yes	509 (12.3)	180 (12.9)	134 (10.5)	136 (14.0)	59 (11.6)	〈.001
	No	3,636 (87.7)	1,212 (87.1)	1,139 (89.5)	837 (86.0)	448 (88.4)	
SNS self-efficacy[2]		11.33±2.38	11.25±2.34	11.37±2.44	11.75±2.28	10.53±2.44	.010
Perceived usefulness of SNS[2]		15.03±2.29	14.99±2.32	15.13±2.31	15.3±2.22	14.25±2.16	.028

Notes. [1] The proportions were calculated based on the total sample (*N*=4,145): Physical disabilities (*n*=1,392), Visual and hearing impairments (*n*=1,273), Internal organ disabilities (*n*=973), and Mental and developmental disabilities (*n*=507).
[2] The analysis was conducted among SNS users only: Total (*n*=509), Physical disabilities (*n*=180), Visual and hearing impairments (*n*=134), Internal organ disabilities (*n*=136), and Mental and developmental disabilities (*n*=59).
[3] *p*-value is result of comparison between disability types.

internal organ disabilities (*n*=973), the proportion of SNS users was highest at 14.0%, and mean scores for SNS self-efficacy and perceived usefulness were also highest, at 11.75 and 15.30, respectively. For those with mental and developmental disabilities (*n*=507), 11.6% used SNS, and mean scores for SNS self-efficacy and perceived usefulness were lower than other groups, at 10.53 and 14.25, respectively 〈Table 2〉.

3. Effects of SNS use, self-efficacy, and perceived usefulness on mental health among individuals with disabilities

Results from logistic regression analysis showed that SNS use was not statistically associated with depression 〈Table 3〉. However, several other variables were significantly associated with depression. Middle-aged adults (*aOR*=2.04, 95% CI: 1.59–2.63) and older adults (*aOR*=1.93, 95% CI: 1.48–2.52) had higher risk of depression compared to young adults. Married individuals had about 39% lower risk of depression than those who were single, divorced, separated, or widowed (*aOR*=0.61, 95% CI: 0.52–0.71). By disability type, individuals with visual and hearing impairments (*aOR*=0.59, 95% CI: 0.49–0.69) and those with mental and developmental disabilities (*aOR*=0.72, 95% CI: 0.56–0.93) had lower risk of depression compared to those with physical disabilities. Individuals with mild disabilities had a lower risk of depression than those with severe disabilities (*aOR*=0.68, 95% CI: 0.59–0.79). Employment status was significant; employed individuals had a much lower risk of depression than unemployed individuals (*aOR*=0.39, 95% CI: 0.33–0.46). Receiving assistance in daily living was linked to a lower risk of depression, while those without assistance faced higher risk (*aOR*=1.86, 95% CI: 1.59–2.17). Educational attainment was protective, as individuals with a high school diploma or higher had lower risk of depression (*aOR*=0.74, 95% CI: 0.64–0.86). Higher social support scores were also associated with reduced risk of depression (*aOR*=0.83, 95% CI: 0.81–0.86).

Within the SNS user group, SNS self-efficacy was significantly associated with depression. Each one-point increase in self-efficacy score corresponded to an approximately 11% decrease in the likelihood of depression (*aOR*=0.89, 95% CI: 0.81–0.97). Perceived usefulness of SNS also showed a significant inverse association with depression, with higher usefulness scores linked to a lower risk of depression (*aOR*=0.91, 95% CI: 0.82–1.00) 〈Table 4〉.

〈Table 3〉 The effects of SNS use on depression among people with disabilities

	Depression		
	aOR	(95% CI)	*p*-value
SNS use[1]: Users of SNS (ref. Non users of SNS)	1.00	(0.79, 1.25)	.968
Gender: Women (ref. Men)	1.09	(0.95, 1.25)	.230
Age group[2]: Middle-aged adults (ref. Young adults)	2.04	(1.59, 2.63)	<.001
Age group[2]: Older adults (ref. Young adults)	1.93	(1.48, 2.52)	<.001
Residential area: Non-metropolitan area (ref. Metropolitan area)	1.11	(0.97, 1.27)	.133
Marital status: Married (ref. Unmarried/divorced/separated/widowed)	0.61	(0.52, 0.71)	<.001
Type of disability: Visual and hearing impairments (ref. Physical disability)	0.59	(0.49, 0.69)	<.001
Type of disability: Internal organ disabilities (ref. Physical disability)	0.84	(0.70, 1.00)	.055
Type of disability: Mental and developmental disabilities (ref. Physical disability)	0.72	(0.56, 0.93)	.011
Severity of disability: Mild (ref. Severe)	0.68	(0.59, 0.79)	<.001
Employment status: Employed (ref. Unemployed)	0.39	(0.33, 0.46)	<.001
Assistance with daily living: None (ref. With assistance)	1.86	(1.59, 2.17)	<.001
Education level: High school graduate (ref. Less than high school)	0.74	(0.64, 0.86)	<.001
Social support (Continuous variable, score)	0.83	(0.81, 0.86)	<.001
Model fit (Log-Likelihood)		-2,513.9	
N		4,145	

Notes. *aOR*=adjusted odds ratio; 95% CI=95% confidence interval; ref.=reference.
[1] *n*=total respondents (*N*=4,145). Logistic regression analysis was adjusted for gender, age group, residential area, marital status, type of disability, severity of disability, education level, employment status, assistance with daily living, and social support (continuous variable, score).
[2] Young adults means 20-39 years old, middle-aged adults means 40-59 years old, and older adults means 60 years old or older.

〈Table 4〉 The effects of self-efficacy use and perceived usefulness of SNS on depression among people with disabilities (n=509)

		Depression[1]		
		aOR	(95% CI)	*p*-value
SNS self-efficacy	Continuous variable	0.89	(0.81, 0.98)	.014
Perceived usefulness of SNS	Continuous variable	0.91	(0.83, 1.00)	.053

Notes. *aOR*=adjusted odds ratio; 95% CI=95% confidence interval; ref.=reference.
[1] Only SNS users are included (*N*=509). Logistic regression analysis was adjusted for gender, age group, residential area, marital status, type of disability, severity of disability, education level, employment status, assistance with daily living, social support (continuous variable, score), and SNS use time.

4. Effects of SNS use, self-efficacy, and perceived usefulness on mental health by disability type

Logistic regression analyses were conducted separately for physical disabilities, visual and hearing disabilities, internal organ disabilities, and mental and developmental disabilities. In the subgroup analysis of mental and developmental disabilities, educational attainment was reclassified into two categories (less than high school and high school or above) because of the limited sample size. The results showed that SNS use and perceived usefulness were not significantly associated with depression for any disability type. However, SNS self-efficacy had a modest but significant association for physical disabilities. Higher SNS self-efficacy was linked to an approximately 15% lower

〈Table 5〉 Effect of SNS use, SNS self-efficacy, and perceived usefulness of SNS on depression, by types of disability

		Physical disabilities	Visual and hearing impairments	Internal organ disabilities	Mental and developmental disabilities[3)]
		aOR (95% CI)	*aOR* (95% CI)	*aOR* (95% CI)	*aOR* (95% CI)
SNS use[1)] (ref. Non users of SNS)	Users of SNS	0.81 (0.55, 1.19)	1.03 (0.63, 1.68)	1.21 (0.77, 1.89)	1.20 (0.63, 2.31)
SNS self-efficacy[2)]	Continuous variable	0.85 (0.72, 1.00)	0.94 (0.77, 1.15)	0.92 (0.76, 1.11)	0.81 (0.58, 1.14)
Perceived usefulness of SNS[2)]	Continuous variable	0.85 (0.72, 1.01)	0.88 (0.7, 1.09)	0.91 (0.75, 1.11)	1.04 (0.73, 1.49)

Notes. *aOR*=adjusted odds ratio; 95% CI=95% confidence interval; ref.=reference.
1) Physical disabilities (*n*=1,392), Visual and hearing impairments (*n*=1,273), Internal organ disabilities (*n*=973), and Mental and developmental disabilities (*n*=507).
2) The analysis was conducted among SNS users only: Physical disabilities (*n*=180), Visual and hearing impairments (*n*=134), Internal organ disabilities (*n*=136), and Mental and developmental disabilities (*n*=59).
3) For individuals with mental and developmental disabilities, education level was reclassified into two categories (less than high school (elementary or middle school), high school or higher) and used as a covariate.

likelihood of depression (*aOR*=0.85, 95% CI: 0.72–1.00). No clear associations were found for the other disability types 〈Table 5〉.

Ⅳ. Discussion

This study analyzed data from 4,145 individuals with disabilities who participated in the 2022 Panel Survey on the Life of Persons with Disabilities to examine the effects of SNS use, SNS self-efficacy, and perceived usefulness on mental health. Of all respondents, 509 individuals (12.3%) reported using SNS. SNS use was more likely among young adults, individuals with mild disabilities, those with at least a high school education, those who were employed, and those with higher levels of social support, indicating more favorable conditions for digital access. Among SNS users, higher SNS self-efficacy and perceived usefulness were significantly associated with a lower likelihood of depression.

In this study, SNS self-efficacy, defined as confidence in effectively using information through SNS, and perceived usefulness, defined as the belief that SNS use is beneficial, emerged as protective factors against depression among individuals with disabilities. In the relationship between SNS use and depression risk, these perceptions and expectations appear to act as mechanisms that support information-seeking and social interaction, which reduces emotional distress (J.-H. Hwang, 2019; Moon et al., 2021). These findings are consistent with previous studies reporting that information use and digital device competence significantly affect life satisfaction among individuals with disabilities, and align with research indicating that the ability to use online health information influences health-related characteristics (Park et al., 2022).

The finding that SNS users were described as "younger, more highly educated, better employed, and more likely to have mild disabilities" shows that disparities in digital access persist within the population of individuals with disabilities. Additionally, differences in mental health outcomes based on SNS self-efficacy and perceived usefulness indicate that gaps exist not only in digital access but also in the quality of digital experience. These results indicate the importance of approaches that improve digital

competence, rather than focusing only on whether individuals use digital technologies.

In both the overall sample and subgroup analyses by disability type, SNS use was not significantly associated with depression. However, SNS self-efficacy showed a significant inverse association with depression in the overall group of SNS users with disabilities and among those with physical disabilities. These findings suggest that self-efficacy tends to reduce the risk of depression and that individual digital literacy within the SNS environment may influence mental health outcomes more than SNS use alone. The results also indicate that psychological factors, such as SNS self-efficacy and perceived usefulness, may have different effects depending on disability type.

For individuals with visual and hearing disabilities, prior research has reported that declines in social functioning, along with resulting isolation and reduced social support, may negatively affect health (Heinze & Jones, 2024). The quality of life, mental health, and social functioning of persons with visual impairments are closely linked to social support. This finding aligns with the inverse association between social support scores and depression risk observed in this study. In this context, the finding that SNS use itself was not directly associated with depression among the visual and hearing disability group suggests that depression may be more closely related to the quality of social relationships and social support achieved through SNS use, rather than mere access to SNS platforms.

For individuals with mental and developmental disabilities, SNS has been proposed as a way to reduce social isolation and feelings of exclusion. However, exposure to risks such as cyberbullying, cyber grooming, identity theft, and exploitation within SNS environments may threaten mental health (Sheehan & Hassiotis, 2017). For individuals with hearing disabilities, SNS may support communication and relationship-building, which can promote social inclusion. However, it may also lower self-esteem, contribute to depressive symptoms, and lead to negative experiences that reinforce fear of missing out (FoMO) and feelings of social isolation (Schäfer & Miles, 2023).

These findings indicate that differences by disability type may not only result from SNS use or exposure to society through SNS, but also from qualitative aspects of SNS use, such as accessibility and the specific limitations of SNS access for each disability type. Therefore, rather than only promoting SNS use, it is necessary to develop digital literacy competencies that support appropriate SNS use, along with institutional measures that ensure social safety nets within SNS environments.

From the perspective of the Digital Determinants of Health (DDOH), digital literacy levels mediate health outcomes throughout the processes of information access, comprehension, and use. Ensuring digital accessibility and improving digital literacy can help individuals with disabilities understand health information and encourage engagement in health-promoting behaviors. For example, smartphone app–based community mobility training has been shown to increase mobile self-efficacy and improve daily functional abilities (M. Lee et al., 2024). In contemporary society, SNS is more than a social platform; it is a key tool in digital health, supporting health information seeking, providing emotional support, and enabling social connections that offer social support. Individuals with disabilities, who are relatively disadvantaged compared to non-disabled populations in economic conditions, digital competence, and accessibility (H. Y. Jung, 2023; KODDI, 2022), benefit from improved access to SNS and similar platforms, which can affect both physical and mental health outcomes, including depression. This evidence highlights the need for digital literacy education to increase SNS self-efficacy and perceived

usefulness among persons with disabilities.

Concerns exist that digital skills and digital divides increase both socioeconomic inequalities and health disparities among persons with disabilities in digital health contexts. Securing digital accessibility is essential to ensure that individuals with disabilities have equal opportunities and can lead healthy lives. Strengthening digital competence is a key aspect of social participation, and digital education content should be tailored to the digital use levels of persons with disabilities (Won & Lee, 2022). Governments should prioritize enhancing digital competence rather than focusing only on improving digital accessibility when developing policies.

In addition to providing tailored educational content, comprehensive digital education roadmaps and training for peer digital counselors should be considered (Moon et al., 2021). To improve digital information accessibility for persons with disabilities, policy research should address more than device distribution and examine integrated IT development and effective implementation strategies that include social environments (H. Y. Kim, 2013). From a health education perspective, digital literacy education should be adapted to disability type, considering both social contexts and individual circumstances, rather than applying a uniform or standardized approach.

This study has several limitations. First, of the 4,145 respondents, only 509 reported using SNS, which limited the sample size and made generalization difficult. Second, the use of cross-sectional data and reliance on simple difference tests and logistic regression analyses limited the ability to reflect temporal sequencing, restricting assessment of causal relationships between SNS use and depression among individuals with disabilities. Third, it remains difficult to determine whether mental health and health behaviors were directly influenced by SNS use.

Although the Panel Survey on the Life of Persons with Disabilities used sampling procedures to ensure adequate representation of rare disability types, the low response rate for SNS use led to too few analyzable cases, especially in the mental and developmental disability group (KODDI, 2022). As a result, the statistical power of regression analyses for this subgroup may have been reduced, which should be considered when interpreting disability-type differences in this study. Future research should examine changes in SNS usage patterns, platform characteristics of SNS users, and levels of digital literacy to better understand the digital determinants of health among persons with disabilities. In addition, later studies should analyze the relationships between SNS use, SNS competence, and mental health, while accounting for diverse disability characteristics.

Ⅴ. Conclusion

This study found that individuals with disabilities who use SNS are more likely to be younger, have mild disabilities, have at least a high school education, be employed, and report higher social support than those who do not use SNS. The results also showed that higher SNS self-efficacy and perceived usefulness were significantly associated with lower depression levels, suggesting that these factors may benefit mental health. By identifying the associations between SNS use and health, this study provides foundational evidence for developing health programs that use digital health approaches and for further analyses of digital determinants of health among persons with disabilities.

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Appendix

〈Appendix table 1〉 Factors associated with SNS use among people with disabilities (*n*=4,145)

Variable	*aOR*	(95% CI)	*p*-value
Gender: Women (ref. Men)	1.13	(0.91, 1.39)	.258
Age group: Middle-aged adults (ref. Young adults)	0.22	(0.16, 0.29)	<.001
Age group: Older adults (ref. Young adults)	0.12	(0.09, 0.16)	<.001
Residential area: Non-metropolitan area (ref. Metropolitan area)	1.24	(1.01, 1.51)	.042
Marital status: Married (ref. Unmarried/divorced/separated/widowed)	1.33	(1.04 ,1.7)	.022
Type of disability: Visual and hearing impairments (ref. Physical disability)	0.73	(0.56, 0.94)	.017
Type of disability: Internal organ disabilities (ref. Physical disability)	1.04	(0.80, 1.36)	.765
Type of disability: Mental and developmental disabilities (ref. Physical disability)	0.45	(0.30, 0.67)	<.001
Severity of disability: Mild (ref. Severe)	1.43	(1.13, 1.81)	.003
Employment status: Employed (ref. Unemployed)	2.47	(1.99, 3.07)	<.001
Assistance with daily living: None (ref. With assistance)	0.95	(0.76, 1.19)	.664
Education level: High school graduate (ref. Less than high school)	3.79	(2.75, 5.22)	<.001
Social support (Continuous variable, score)	1.05	(0.99, 1.10)	.097
Model fit (Log-Likelihood)		-1,273.9	
N		4,145	

Notes. *aOR*=adjusted odds ratio; 95% CI=95% confidence interval; ref.=reference.