



An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

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Abstract

Background: Health promotion (HP) is crucial for addressing health inequalities and enhancing healthcare quality. Nurses play a vital role in delivering HP services, yet their competence in this area needs further investigation. This study aims to explore the impact of HP knowledge and perceptions on nurses' HP practices.

Methods: A self-administered questionnaire was used to survey 184 nurses randomly selected from a tertiary hospital. The questionnaire covered demographics, HP knowledge, perceptions, and practices. Data were analyzed using IBM SPSS Statistics, Version 26.0.

Results: The analysis revealed significant relationships between participants' demographics and their level of HP knowledge. Furthermore, significant associations were found between holistic disease knowledge and effective patient care ($p = 0.001$) and between awareness of patient education importance and encouraging healthy lifestyles ($p < 0.001$).

Conclusion: Nurses' HP knowledge strongly influenced their perceptions and practices in HP. It is essential for healthcare organizations and educational institutions to integrate robust HP training into nursing education and ongoing professional development.

Keywords: Nurses, Health promotion, Practice

Introduction

Health Promotion (HP) encompasses various strategies aimed at preserving people's well-being and quality of life by addressing the root causes of diseases, rather than focusing solely on biomedical care (World Health Organization et al., 2016). The concept of health has evolved significantly, moving from a mere absence of illness to a holistic approach to living a fulfilling life (World Health Organization, 1986). The Ottawa Charter for HP in 1986 marked a pivotal shift in global health perspectives, emphasizing health as a means to achieving a full life rather than just a goal (World Health Organization, 1986). Consequently, HP has become a fundamental activity in modern society, with numerous initiatives and interventions designed by organizations like the World Health Organization (WHO) to translate HP concepts into practical reality (Smith et al., 2006).

Among these initiatives are programs like health-promoting hospitals (HPH), health-promoting schools, integration of HP into the Sustainable Development Goals (SDGs), and workplace-related HP efforts (WHO/UNICEF, 2020; World Health Organization, 2017; María-ángeles et al., 2021). These programs have demonstrated positive health outcomes and are vital components of public health strategies.

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

Nurses play a critical role in HP today, extending beyond traditional clinical duties to encompass check-up care, patient education, and disease prevention services (Kemppainen et al., 2012). They contribute significantly to improving health outcomes, including medication education, therapeutic compliance, quality of life, and patient empowerment (Molina-mula & Gallo-estrada, 2020). However, despite their pivotal role, preventable diseases continue to pose significant public health challenges globally (Hayes & Gillian, 2020).

nurses are at the forefront of addressing a quadruple burden of disease, comprising communicable diseases, maternal and child health issues, non-communicable diseases (NCDs), and trauma and injury (Statistics, 2020). The country's adoption of the National Development Plan (NDP) reflects a long-term vision to tackle these health challenges (Statistics 2020).

While nurses are crucial in HP, some reports question their effectiveness in this domain (Kemppainen et al., 2012). Therefore, this study aims to assess the health promotion knowledge, perceptions, and practices of nurses in tertiary hospital to understand their role in addressing public health challenges and contributing to universal health coverage (UHC) through HP initiatives.

Methods

Design, Sample, and Respondents

A descriptive cross-sectional design was utilized in this study. The target population consisted of registered nurses employed at a tertiary hospital. Exclusions encompassed student nurses, nurses from international exchange programs, and auxiliary nurses.

Data Collection

Data collection relied on a self-administered structured questionnaire. Collected data were anonymized, accessible only to the principal researcher. The questionnaire, adapted from a previous study with similar objectives (Shoqirat, Year), was administered between February and April 2017. With a 95% confidence level and a 5% error margin, a sample size of 184 was determined. Data collection ceased upon reaching this target and was conducted by the principal investigator and a trained fieldworker.

Survey Instrument

The questionnaire (see supplementary file 1) comprised 22 closed-ended questions across four sections. Section A focused on demographics (questions 1-7), including sex, age group, nurse registration status, and years of registration. Section B (questions 8-9) assessed knowledge, while Section C (questions 10-15) explored nurses' perceptions of health promotion. Section D (questions 16-22) centered on nurses' health promotion practices.

Data Analysis

Data were analyzed using IBM SPSS Statistics Version 26.0. Descriptive analysis was conducted on demographics, knowledge, perception, and practice sections. Bivariate analysis examined relationships between demographics and knowledge, perception, and practice. Similar analyses were conducted to assess relationships between perception and practice, knowledge and practice, and knowledge and perception.

Ethics

Ethical approval was obtained from the University of Roehampton, London, and the Research Ethics Committee (Human) of Nelson Mandela University (NMU), Ref: H16-HEA-NUR-EXT-003. Informed, written consent was secured from each participant. This study involved non-vulnerable adults, ensuring no coercion, distress, work time loss, or damage to professional reputation.

Results

Baseline Characteristics

A total of 184 nurses participated in the questionnaire. Female respondents comprised 82.6% (n = 152), with males constituting 7.6% (n = 14). Gender information for 9.8% (n = 18) was unspecified. The majority of nurses (72%, n = 133) were aged 40 years or above. Regarding registration duration, 35.9% (n = 66) had been registered as nurses for 10 years or less.

Knowledge, Perception, and Practice of Health Promotion

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

Among the 184 nurses, 56.0% (n = 103) agreed that they had sufficient knowledge to provide health promotion services related to patients' conditions in their units. Additionally, 63.6% (n = 117) strongly believed that health education and counseling from nurses could improve patients' health, while 51.6% (n = 95) encouraged patients to undergo fitness assessments and health screenings. A detailed summary of respondents' characteristics is presented in Table I.

Bivariate Analysis of Relationships Among Outcomes

Statistical analysis revealed significant associations between nurses' professional registration duration and their knowledge adequacy for providing health promotion services ($p = 0.015$). Furthermore, the age range of nurses showed a statistically significant relationship with the perception that hospitals are conducive for health promotion activities ($p = 0.006$). However, no significant association was found between nurses' demographics and their health promotion practices.

When comparing nurses' perceptions with their health promotion practices, 21 statistically significant factors emerged. These factors encompassed various aspects such as holistic disease knowledge, hospital suitability for health promotion, patient engagement in healthy behaviors, and the desire for health education from nurses. Details of these relationships are presented in Table II.

Comparison of Knowledge and Practice

The analysis between nurses' knowledge and their health promotion practices revealed 11 significant relationships. Notably, having adequate knowledge for health promotion and educating patients about their conditions showed a strong association with encouraging patients to adopt healthy lifestyles ($p < 0.001$). Details of these relationships are outlined in Table III.

Relationship Between Knowledge and Perception Towards Health Promotion

The analysis identified nine significant associations between nurses' knowledge and their perception of health promotion. Notably, adequate knowledge about patients' conditions and the importance of educating patients correlated strongly with positive perceptions of health education and counseling from nurses ($p < 0.001$). Details of these relationships are summarized in Table IV.

Table. I. Knowledge, perception and practice of health promotion.

Variables	Strongly Disagree n. (%)	Disagree n. (%)	Neutral n. (%)	Agree n. (%)	Strongly Agree n. (%)
Knowledge Variables					
I have adequate knowledge necessary for HP provision	3 (1.6)	7 (3.8)	12 (6.5)	103 (56.0)	55 (29.9)
I am aware of the importance of providing HE to patients	0	0	2 (1.1)	57 (31)	121 (65.8)
Perception Variables					
A holistic knowledge of disease processes is a pre-requisite for patient care	0	0	2 (1.1)	70 (38)	112 (60.9)
Hospital is an ideal place for HP	1 (0.5)	15 (8.2)	11 (6.0)	70 (38.0)	83 (45.1)
Health promotion is a waste of time	129 (70.1)	41 (22.3)	5 (2.2)	2 (1.1)	2 (1.1)
Patients who engage in an unhealthy lifestyle will not benefit from HP	60 (32.6)	45 (24.5)	13 (7.1)	29 (15.8)	31 (16.8)

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

Health education and counseling from nurses could enhance patients' health	1 (0.5)	3 (1.6)	1 (0.5)	59 (32.1)	117 (63.6)
Patients do not want health education from nurses	71 (38.6)	78 (42.4)	17 (9.2)	7 (3.8)	6 (3.3)
Practice Variables					
I educate my patients on medication and how it works	0	2 (1.1)	6 (3.3)	74 (40.2)	98 (53.3)
I educate my patients about their disease conditions	0	2 (1.1)	14 (7.6)	84 (45.7)	80 (43.5)
I provide my patients with necessary guidance about diet and lifestyle	2 (1.1)	2 (1.1)	15 (8.2)	76 (41.3)	86 (46.7)
I educate my patients on the need for a routine checkup	1 (0.5)	4 (2.2)	13 (7.1)	73 (39.2)	89 (48.4)
I use my smart phone/devices to search for key information for my patients	10 (5.4)	16 (8.7)	36 (19.6)	74 (40.2)	43 (23.4)
I encourage my patients to engage in the healthiest lifestyle they can attain	0	1 (0.5)	12 (6.5)	94 (51.1)	74 (40.2)
I encourage my patients to observe fitness assessments and health screening	0	3 (1.6)	26 (14.1)	9 (51.6)	57 (31.0)

Table. II. Relationship between responses on health promotion perception and practices by nurses

Perception	Practice	SDA	DA	N	A	SA	p-value
A holistic knowledge of disease pathology and processes are vital for effective care of patients	I educate my patients on medication	0	0	2	69	109	0.001
	I educate my patients on need for checkup	0	0	2	69	109	0.008
	Patients encouraged to engage in healthy lifestyle	0	0	2	68	111	0.004
	I encourage my patients to observe fitness assessments and health screening	0	0	2	68	111	0.049
Hospital is an ideal place for HP	I educate my patients on medication	1	5	10	67	83	0.010
	I educate my patients on need for checkup	1	15	10	67	83	0.044
	I use my smart phone/devices for supportive information on HP	1	14	10	68	82	0.004

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

Patients who deliberately engage in an unhealthy lifestyle will not benefit from health promotion	I educate my patients about their disease condition	60	45	13	28	31	< 0.001
	I provide necessary guidance about diet and lifestyle	60	45	13	29	31	0.007
	Patients encouraged to engage in healthy lifestyle	60	44	12	29	31	0.026
	I encourage my patients to observe fitness assessments and health screening	60	44	13	29	30	0.031
Patients who deliberately engage in an unhealthy lifestyle will not benefit from health promotion	Patients encouraged to engage in healthy lifestyle	1	15	10	69	82	< 0.001
Health education, advise, and counseling from nurses could positively enhance patients' health	I educate my patients on medication	1	3	1	58	117	0.007
	I educate my patients about their disease condition	1	3	1	59	116	0.048
Patients do not want health education from nurses	I educate my patients on medication	71	77	17	7	6	0.049
	I educate my patients about their disease condition	70	78	17	7	6	0.016
	I provide necessary guidance about diet and lifestyle	71	78	17	7	6	0.012
	I educate my patients on need for checkup	70	78	17	7	6	0.011
	I use my smart phone/devices for supportive information on HP	70	77	17	7	6	0.037
	Patients encouraged to engage in healthy lifestyle	71	76	17	7	6	< 0.001
	I encourage my patients to observe fitness assessments and health screening	70	77	17	7	6	0.001

Table. III. Relationship between Knowledge and Practice

Knowledge variables	Practice variables	SDA	DA	N	A	SA	p-value
I have adequate knowledge regarding the conditions patients present with in this unit to provide health promotion services	I educate my patients on medication	3	7	12	102	55	0.014
	I educate my patients about their disease condition	3	7	12	103	54	< 0.001
	I provide necessary guidance about diet and lifestyle	3	7	12	103	55	< 0.001

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

	I educate my patients on need for checkup	3	7	12	103	54	< 0.001
	I use my smart phone/devices for supportive information on HP	3	7	12	103	53	0.149
	Patients encouraged to engage in healthy lifestyle	3	7	11	103	54	< 0.001
	I encourage my patients to observe fitness assessments and health screening	3	7	12	101	55	< 0.001
I am aware of how important it is to educate my patients about their condition	I educate my patients on medication	0	0	2	57	120	0.005
	I educate my patients about their disease condition	0	0	2	57	120	< 0.001
	I provide necessary guidance about diet and lifestyle	0	0	2	57	121	< 0.001
	I educate my patients on need for checkup	0	0	2	57	120	< 0.001
	I use my smart phone/devices for supportive information on HP	0	0	2	57	119	0.146
	Patients encouraged to engage in healthy lifestyle	0	0	2	56	120	< 0.001
	I encourage my patients to observe fitness assessments and health screening	0	0	2	56	120	< 0.001

Table. IV. Relationship between nurses' knowledge and Perception regarding HP

Knowledge variables	Perception variables	SDA	DA	N	A	SA	p-value
I have adequate knowledge regarding the conditions patients present with in this unit to provide health promotion services	A holistic knowledge of disease pathology and processes are vital for effective care of patients	3	7	12	103	55	< 0.001
	Hospital is an ideal place for promoting patients' health because the patients can be spoken to as a group and /or one on one	3	7	12	101	53	0.001
	Health promotion is a waste of time	3	7	12	103	53	0.531

	Patients who deliberately engage in an unhealthy lifestyle will not benefit from health promotion	3	7	12	100	55	0.050
	Health education, advise and counseling from nurses could positively enhance patients health	3	7	12	103	55	< 0.001
	Patients do not want health education from nurses	3	7	12	103	53	0.469
I am aware of how important it is to educate my patients about their condition	A holistic knowledge of disease pathology and processes are vital for effective care of patients	0	0	2	57	121	< 0.001
	Hospital is an ideal place for promoting patients' health because the patients can be spoken to as a group and /or one on one	0	0	2	56	118	0.350
	Health promotion is a waste of time	0	0	2	57	119	< 0.001
	Patients who deliberately engage in an unhealthy lifestyle will not benefit from health promotion	0	0	2	56	119	0.003
	Health education, advise and counseling from nurses could positively enhance patients' health	0	0	2	57	121	0.002
	Patients do not want health education from nurses	0	0	2	57	119	< 0.001

Discussion

This study delves into the perspectives of nurses regarding their knowledge, perception, and practices related to health promotion within a tertiary hospital context. The analysis indicates that nurses acknowledge having sufficient knowledge about their patients' medical conditions to provide effective health promotion. They also recognize hospitals as suitable environments for health promotion activities and actively encourage patients to adopt healthy lifestyles. These findings underscore the importance of providing robust support systems to nurses, enabling them to sustain and enhance their role in health promotion efforts. (Sáenz et al., 2021)

The study's findings regarding the correlation between nurses' years of experience and their knowledge align with previous research highlighting the value of experience in nursing practice. Experienced nurses often possess a wealth of knowledge and wisdom crucial for delivering high-quality care. However, this expertise is often discipline-specific, as nurses without exposure to health promotion and related areas may lack the necessary knowledge despite their experience. (Kemppainen et al., 2012)

The study also reveals the significant impact of nurses' perceptions on their health promotion practices. Nurses who perceive holistic knowledge of disease processes as vital are more likely to engage in educating patients about medication adherence, the importance of check-ups, and healthy lifestyle choices. This aligns with previous studies showing that beliefs and perceptions strongly influence healthcare practices, such as medication adherence. (Molina-Mula & Gallo-Estrada, 2020)

An assessment of nurses' participation in Health Promotion: a knowledge, perception, and practice perspective

The perception that hospitals are ideal places for health promotion is associated with nurses using technology, such as smartphones, to access information and educate patients. This underscores the role of organizational culture and technology in facilitating effective health promotion practices among nurses. Educating patients within healthcare settings is fundamental to shared decision-making, treatment adherence, and overall improved patient satisfaction. (Hayes & Gillian, 2020)

While the study did not find a significant association between the perception of hospitals as ideal places for health promotion and educating patients about their specific health conditions, this could be attributed to nurses' varying levels of knowledge about specific diseases. However, previous research has shown that nurses actively involved in patient education empower patients to manage their health conditions better. (Stanulewicz et al., 2020)

The positive correlation between nurses' knowledge and their health promotion practices highlights the importance of ongoing training and knowledge enhancement in healthcare settings. This not only improves patient outcomes but also contributes to cost-effective healthcare delivery. Empowering nurses with adequate knowledge enables them to fulfill their health promotion roles effectively, including guiding patients on essential lifestyle changes for better health outcomes. (Ojong et al., 2020)

Conclusion

In conclusion, this study has provided valuable insights into the impact of health promotion (HP) knowledge and perceptions on nurses' practices within a tertiary hospital setting. The findings underscore the pivotal role of nurses in HP, given their expertise and regular interactions with patients, particularly those with chronic non-communicable diseases. HP is a crucial aspect of public health essential for achieving universal health coverage.

The study emphasizes the need for a robust educational program for nurses, encompassing both undergraduate training and continuous in-service training. This education should focus on updating nurses' knowledge and understanding of HP principles and practices. By equipping nurses with updated HP knowledge, healthcare systems can enhance their capacity to deliver effective HP services to patients.

Looking ahead, future research should explore innovative models that can bring about meaningful reforms in HP practices among nurses. This could involve studying the efficacy of specific training interventions, organizational support structures, and policy frameworks aimed at optimizing nurses' roles in HP and improving overall health outcomes.

Overall, this study contributes to the growing body of literature on nurses' involvement in HP and highlights the need for ongoing education and support to empower nurses in their critical role as promoters of health and well-being within healthcare settings.

References

1. World Health Organization. (2016). What is health promotion? Retrieved from <https://www.who.int/news-room/q-a-detail/health-promotionHealthpromotion>
2. World Health Organization. (1986). The Ottawa Charter for Health Promotion. Retrieved from <https://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
3. Smith, B. J., Tang, K. C., & Nutbeam, D. (2006). WHO Health Promotion Glossary: new terms. *Health Promotion International*, 21(4), 340-345. <https://doi.org/10.1093/heapro/dal033>
4. McFarlane, K., Judd, J., Devine, S., & Watt, K. (2016). Reorientation of health services: enablers and barriers faced by organizations when increasing health promotion capacity. *Health Promotion Journal of Australia*, 27(2), 118-133. <https://doi.org/10.1071/HE15078>
5. World Health Organization (WHO). (2020). Global Standards for Health Promoting Schools and their implementation guidance. Retrieved from <https://www.who.int/publications/i/item/9789240011069>
6. World Health Organization (WHO). (2017). Promoting health in the SDGs. Report on the 9th Global conference for health promotion, Shanghai, China, 21–24 November 2016: all for health,

- health for all. Geneva: World Health Organization. (WHO/NMH/PND/17.5). Licence: CC BY-NC-SA 3.0 IGO. Retrieved from <http://apps.who.int/bookorders>
7. Sáenz, M. Á., Maqueda, J., Moreno, F., Sáez, M. J., & Sánchez, M. D. (2021). Evaluation of the Effectiveness of Workplace Health Promotion Programs from 2000 to 2020: A Literature Review. *Open Journal of Preventive Medicine*, 11, 113-131. <https://doi.org/10.4236/ojpm.2021.114010>
 8. Kemppainen, V., Tossavainen, K., & Turunen, H. (2012). Nurses' roles in health promotion practice: An integrative review. *Health Promotion International*, 28(4), 490-501. <https://doi.org/10.1093/heapro/das034>
 9. Molina-Mula, J., & Gallo-Estrada, J. (2020). Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *International Journal of Environmental Research and Public Health*, 17(8), 2835. <https://doi.org/10.3390/ijerph17082835>
 10. Whitehead, D. (2011). Health promotion in nursing: A Derridean discourse analysis. *Health Promotion International*, 26(1), 117-127. <https://doi.org/10.1093/heapro/daq073>
 11. Hayes, T. O. N., & Gillian, S. (2020). Chronic Disease in the United States: A Worsening Health and Economic Crisis. American Action Forum. Retrieved from <https://www.americanactionforum.org/research/chronic-disease-in-the-united-states-a-worsening-health-and-economic-crisis/>
 12. Steiner, C. A., Barrett, M. L., Weiss, A. J., Andrews, R. M., & Ph, D. (2014). Trends and Projections in Hospital Stays for Adults With Multiple Chronic Conditions, 2003–2014. Healthcare Cost and Utilization Project. PMID: 25558764
 13. Menon, G. R., Singh, L., Sharma, P., Yadav, P., Sharma, S., Kalaskar, S., et al. (2017). National Burden Estimates of healthy life lost in India, 2017: An analysis using direct mortality data and indirect disability data. *Lancet Global Health*, 7(12), e1675-e1684. [https://doi.org/10.1016/S2214-109X\(19\)30451-6](https://doi.org/10.1016/S2214-109X(19)30451-6)
 14. Kassa, M., & Grace, J. (2019). The Global Burden and Perspectives on Non-Communicable Diseases (NCDs) and the Prevention, Data Availability and Systems Approach of NCDs in Low-resource Countries. *IntechOpen*. <https://doi.org/10.5772/intechopen.89516>
 15. Stanulewicz, N., Knox, E., Narayanasamy, M., Shivji, N., Khunti, K., & Blake, H. (2020). Effectiveness of lifestyle health promotion interventions for nurses: A systematic review. *International Journal of Environmental Research and Public Health*, 17(1), 17. <https://doi.org/10.3390/ijerph17010017>
 16. Statistics South Africa. (2020). Mortality and causes of death in South Africa: Findings from death notification. Retrieved from <http://www.statssa.gov.za/publications/P03093/P030932017.pdf>
 17. Shoirat, N. (2009). The Role of Jordanian Hospital Nurses in Promoting Patients' Health. Queen Margaret University. Retrieved from <https://ereseach.qmu.ac.uk/bitstream/handle/20.500.12289/7383/137.pdf?sequence=1&isAllowed=y>
 18. Whyte, J., Ward, P., & Eccles, D. W. (2009). Critical care nurses. *YMHL*, 38, 517-525. <http://dx.doi.org/10.1016/j.hrtlng.2008.12.006>
 19. Lartey, S., Cummings, G., & Profetto-McGrath, J. (2014). Interventions that promote retention of experienced registered nurses in health care settings: A systematic review. *Journal of Nursing Management*, 22, 1027-1041. <https://doi.org/10.1111/jonm.12105>
 20. Nesari, M., Olson, J. K., Nasrabadi, A. N., & Norris, C. (2019). Registered Nurses' Knowledge of and Experience with Health Literacy. *Health Literacy Research and Practice*, 3, e268-e279. <https://doi.org/10.3928/24748307-20191021-01>
 21. Al-Noumani, H., Wu, J., Barksdale, D., Sherwood, G., Alkhasawneh, E., & Knafl, G. (2019). Health beliefs and medication adherence in patients with hypertension: A systematic review of quantitative studies. *Patient Education and Counseling*, 102, 1045-1056. <https://doi.org/10.1016/j.pec.2019.02.022>

22. Ojong, I. N., Nsemo, A. D., & Aji, P. (2020). Routine Medical Checkup Knowledge, Attitude and Practice among Health Care Workers in a Tertiary Health Facility in Calabar, Cross River State, Nigeria. *Global Journal of Health Science*, 12, 27-37. <https://doi.org/10.5539/gjhs.v12n8p27>
23. Malakoane, B., Heunis, J. C., Chikobvu, P., Kigozi, N. G., & Kruger, W. H. (2020). Public health system challenges in the Free State, South Africa: A situation appraisal to inform health system strengthening. *BMC Health Services Research*, 20, 58. <https://doi.org/10.1186/s12913-019-4862-y>
24. Chiwire, P., Evers, S. M., Mahomed, H., & Hiligsmann, M. (2021). Willingness to pay for primary health care at public facilities in the Western Cape Province, Cape Town, South Africa. *Journal of Medical Economics*, 24, 162-172. <https://doi.org/10.1080/13696998.2021.1877147>
25. Slabbert, J. A., & Smith, W. P. (2011). Patient transport from rural to tertiary healthcare centres in the Western Cape: Is there room for improvement? *African Journal of Emergency Medicine*, 1, 11-16. <http://dx.doi.org/10.1016/j.afjem.2011.04.001>
26. Tankard, M. E., & Paluck, E. L. (2016). Norm perception as a vehicle for social change. *Social Issues and Policy Review*, 10, 181-211. <https://spssi.onlinelibrary.wiley.com/doi/abs/10.1111/sipr.12022>
27. Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., ... & Munro, G. D. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behaviour*, 4, 460-471. <https://doi.org/10.1038/s41562-020-0884-z>
28. Timmers, T., Janssen, L., Kool, R. B., & Kremer, J. A. (2020). Educating patients by providing timely information using smartphone and tablet apps: Systematic review. *Journal of Medical Internet Research*, 22, e17342. <https://doi.org/10.2196/17342>
29. Nikitara, M., Constantinou, C. S., Andreou, E., & Diomidous, M. (2019). The role of nurses and the facilitators and barriers in diabetes care: A mixed methods systematic literature review. *Behavioral Sciences*, 9, 61. <https://doi.org/10.3390/bs9060061>
30. Jansink, R., Braspenning, J., Van Der Weijden, T., Elwyn, G., & Grol, R. (2010). Primary care nurses struggle with lifestyle counseling in diabetes care: A qualitative analysis. *BMC Family Practice*, 11, 41. <https://doi.org/10.1186/1471-2296-11-41>
31. Bettinelli, M. E., Bezze, E., Morasca, L., Plevani, L., Sorrentino, G., Morniroli, D., ... & De Amicis, M. (2019). Knowledge of health professionals regarding vegetarian diets from pregnancy to adolescence: An observational study. *Nutrients*, 11, 1149. <https://doi.org/10.3390/nu11051149>