

Research Progress on Aging Knowledge, Attitudes Towards the Elderly, Willingness to Engage in Elderly Healthcare-related Work, and Influencing Factors Among Medical Treatment and Public Health-related Students

Ruyue Shao¹ Li Tan² Xuemei Zhong³ Yu Zhang⁴ Zhuoxin Shi⁵

^{1,2,3,5} School of Clinical Medicine, Chongqing Medical and Pharmaceutical College, Chongqing 401331, China

⁴ Department of Obstetrics and Gynecology, People's Hospital of Chongqing Banan District, Banan Hospital of Chongqing Medical University, Chongqing 401320, China

⁵Corresponding author. Email: 10948@cqmpc.edu.cn

ABSTRACT

With the acceleration of global aging process, the demand for medical services for the elderly continues to rise, but there is still a significant shortage in the supply of related services. The attitude of medical related students towards the elderly and their willingness to engage in elderly medical work directly affect the quality of future medical services. This article summarizes the attitudes of medical and health-related students towards the elderly, their mastery of aging knowledge, and their willingness to engage in elderly related work, and explores the key variables that affect these factors. The relationship between attitude, knowledge, and career aspirations is complex, influenced by factors such as educational background, contact experience with the elderly, family structure, and cultural factors. Improving the quality of geriatric medical education, increasing opportunities to interact with the elderly, and breaking down age discrimination stereotypes are important paths to improving students' attitudes towards the elderly and enhancing their career aspirations. This article provides a theoretical basis and practical suggestions for optimizing the cultivation of elderly care abilities among medical students.

Keywords: Aging process, Elderly, Aging knowledge, Elderly attitudes, Age discrimination.

1. INTRODUCTION

Aging is a natural and irreversible process that involves physiological, psychological (including emotional and cognitive), and social changes.[1] The global elderly population is rapidly growing.[2, 3] In developed countries, the proportion of the population aged 60 and above is expected to increase from 11.5% in 2012 to 22% in 2050.[3, 4] At the same time, the oldest segment of this population group, namely those aged 80 and above, is rapidly growing and is expected to increase fourfold to 395 million people by 2050.[5] China has the largest elderly population in the world.[6] The proportion of adults aged 65 and above has increased from 123 million (9.1%) in 2011 to 200 million (14.2%) in 2021. By 2050, the population

aged 65 and above in China will reach 395 million people.[7]

With the changes in population structure and the extension of life expectancy, the risk of chronic diseases, functional disorders, physical dysfunction, cognitive impairment, and increased dependence also increases.[8, 9] This phenomenon has led to a significant increase in global demand for nursing and rehabilitation. But in many regions of the world, this growing demand is still largely unmet, with over 50% of people in some low - and middle-income countries unable to access the services they need.[10] Stereotypes about the elderly and assumptions about their vulnerability and dependence affect both the general public and healthcare professionals. The elderly should be regarded as objects worthy of respect, while age

discrimination will affect their physical, emotional, and social quality of life.[11] The quality of medical services provided to the elderly is largely influenced by the attitudes of healthcare professionals towards them.[8, 12] There have been literature reports of negative attitudes towards the elderly among healthcare professionals, and this attitude is seen as a barrier to providing high-quality medical services and treatment for the elderly.[13, 14] This article reviews the attitudes of medical related students towards the elderly, their willingness to engage in elderly healthcare related work, and their influencing factors, in order to provide some reference for improving the quality of elderly healthcare services.

2. ATTITUDE TOWARDS THE ELDERLY

Attitude is defined as a positive or negative evaluation of people, places, things, or events. Attitude includes cognitive, behavioral, and emotional components, and is based on individual beliefs and values.[15] Attitude will change over time and be influenced by social and emotional demands.[5] There are divergent reports in the literature regarding whether health-related students and staff hold positive or negative attitudes towards the elderly. In 2004, Mason and Sanders found that negative attitudes towards older adults were prevalent in all undergraduate social care courses, and working with older adults was described as the least preferred career choice among students.[16] Some studies have also reported that nursing students have negative attitudes towards the elderly.[17-20] In contrast, Amrhein and Backes found that students majoring in health and social care in Germany hold a fair view of age, but they are more willing to work with young people in the future.[21] Some studies have reported that students majoring in physical therapy hold neutral to weak positive attitudes towards the elderly.[22, 23] In addition, some studies have found that nursing and physical therapy students hold positive attitudes towards the elderly.[8, 24-27] A cross-sectional study conducted by the authors' team on 890 rehabilitation medical students from three universities in southwestern China also found that rehabilitation medical students generally hold a positive attitude towards the elderly.[28]

Research has shown that insufficient understanding of aging knowledge is associated with negative attitudes towards older adults and a lack of interest in working with them.[29] In 2012,

Boswell studied whether increasing the knowledge of professional trainers would reduce attitudes towards age discrimination. Boswell conducted a study on 43 undergraduate health students using the Fraboni Age Discrimination Scale[30] and Aging Knowledge Scale[31], and found that those who felt anxious about aging before the start of the course and had little understanding of the aging process exhibited more age discriminatory attitudes and lower interest in working with older adults. Boswell believed that education has increased interest in working with older adults and reduced attitudes of age discrimination.[29] King et al. also believed that incorporating geriatric nursing into the curriculum can alleviate fears and concerns related to caring for the elderly.[32] Some studies have also revealed a significant positive correlation between aging knowledge and attitudes towards the elderly.[9, 33, 34] In a study of 308 German medical students' attitudes towards the elderly, Klaghofs et al. reported similar findings. These findings suggest that aging education can increase students' interest in working with older adults.[35] In a study targeting undergraduate students majoring in physical therapy, Hobbs et al.[36] measured students' attitudes and knowledge levels towards older adults at three time points. The research results show that at the first time point, students hold a certain positive attitude towards the elderly. However, although students' knowledge of the elderly increased from less than 50% to 52%, there was no significant improvement in their positive attitude towards the elderly at the third time point. Researchers pointed out that education may help improve knowledge about aging, while its impact on attitudes is more widespread. Nevertheless, educators still have a responsibility to provide courses that can help students prepare for working with the elderly, and to focus on correcting age discriminatory attitudes and misconceptions about aging. The authors' team's research also found a significant positive correlation between aging knowledge and attitudes towards the elderly, and aging knowledge is an independent predictor of attitudes towards the elderly.[28] A positive attitude plays an important role in the quality of care for the elderly.[2] Therefore, schools and educators should recognize that education can enhance students' knowledge of aging and promote their positive attitudes towards the elderly. Both the education of current students and the continuing education of healthcare professionals can consider incorporating courses related to geriatric medicine into the curriculum system.

3. MASTERY OF AGING KNOWLEDGE

In recent years, a series of studies have investigated the mastery of aging knowledge among students and staff in health-related majors. A study exploring the knowledge level of nursing students and registered nurses regarding hospitalized elderly patients showed that all respondents had significant deficiencies in knowledge related to elderly patients, and there were significant differences in knowledge among nurses with different educational levels. Additionally, there was a positive correlation between nurses' work experience and their knowledge level. The authors believe that in the nursing profession, basic nursing knowledge related to elderly patient care should occupy an important position in basic nursing education courses, and should be strengthened in continuing education courses provided by hospitals for nurses.[37] In 2020, Mohammad et al.[17] conducted a cross-sectional study to explore the correlation between the sociodemographic and occupational characteristics of 317 Jordanian nurses and their levels of knowledge, attitudes, and age discrimination towards the elderly. The results showed that nurses had insufficient knowledge and attitudes towards the elderly, and there was significant age discrimination among nurses. Moreover, knowledge, attitudes, and negative age discrimination varied under different sociodemographic and occupational characteristics. Nurses' knowledge and attitudes towards the elderly were significantly correlated with negative age discrimination. Several studies from Saudi Arabia on the aging process and elderly care knowledge have shown that participants have poor knowledge of aging.[14, 38, 39] These studies indicate that nursing students at three major universities in Saudi Arabia have insufficient knowledge about the physical and social aspects of aging.[39] Mellor et al. found that although nurses hold a positive attitude, they lack knowledge of elderly care.[38] The research results of Yang et al. also show that general practitioners have insufficient understanding of aging knowledge, especially in psychological and social aspects.[14] Several scholars generally suggest that strengthening gerontology education for health professionals is an urgent need to address the growing aging population.[14, 38, 39]

The authors' team's research also shows that rehabilitation medical students from three

universities in Chongqing exhibit relatively low levels of aging knowledge, with more knowledge about the physical aspects of the elderly and less knowledge about social aspects.[28] This phenomenon may be related to insufficient attention to geriatric medicine in medical education. In a study, only 42% of the medical schools surveyed included courses related to geriatrics and aging in their teaching plans.[40] In a systematic review, Mateos Nozal J et al. [41] also pointed out that the issue of geriatric medical education is a global challenge. Only 41% of countries have included some geriatric related content in undergraduate medical education. In Europe, although there has been an increase in recent years, only 62% of medical schools still make geriatrics a compulsory course.[41] This phenomenon should draw attention to the current knowledge level and educational status of Chinese medical and health students. In the cultivation of medical and health students in China, it is also necessary to strengthen the teaching of geriatric medicine related content.

4. WILLINGNESS TO ENGAGE IN ELDERLY RELATED WORK

There is a difference between attitudes towards aging and perspectives on working with older adults. Perhaps even if the attitude towards aging is positive, it may not necessarily translate into a positive concept or attitude towards caring for the elderly.[42] Previous studies often assumed that having a positive attitude towards older adults implies a willingness to work with this group, but this assumption has been questioned by researchers.[20, 29] Studies have shown that working with elderly people is often the career direction that students are least willing to choose.[29] Mason and Sanders[16] pointed out that many students and professionals view working with older adults as a lower status profession, which further reinforces people's perception that this field is unimportant or lacks value. Kydd and Wild[43] conducted a multi-factor questionnaire in 1999 (n=376) and 2009 (n=546) to investigate the attitudes of healthcare professionals towards working with elderly people. The results showed that there was not much difference between the two surveys, and respondents generally held a positive attitude towards working with elderly people and showed a high level of enthusiasm. However, some changes still occurred between different time periods. Although participants in 2009 still believed that elderly care often occurred in areas with poor work environments and limited promotion

opportunities, compared to 1999, a higher proportion of respondents indicated that they had chosen or would consider pursuing a career in geriatric medicine. Stevens investigated the career choices of undergraduate nursing students and found that the majority of nursing students prioritize working with elderly individuals as their last career choice, and this willingness seems to have further declined over time. Students are most inclined to choose fields with strong technical skills, while working with elderly people is considered to have a negative impact on their career development.[44] This research result is consistent with some previous studies[45, 46].

The author's team research also found that rehabilitation medical students have a lower interest in working in elderly rehabilitation related fields, with only 41.9% of respondents indicating a willingness to work in elderly rehabilitation related fields after graduation, and 48.9% of respondents expressing uncertainty.[28] Consistent with this, the studies of King et al.[32] and Bleijenberget al.[47] also indicated that nursing students have a lower willingness to take care of the elderly. Peach[48] pointed out that only 16.1% of students majoring in physical therapy are willing to work primarily with elderly patients after graduation. Henderson et al.[49] also reported that although students hold a positive attitude towards the elderly, they do not enjoy working with them. The team further explored the reasons why students are unwilling to engage in elderly rehabilitation related work. Rehabilitation students attribute their low interest in elderly rehabilitation to their unpleasant experiences with the elderly in the past, difficulties in communicating with them, perception that the elderly are unhygienic and uninteresting, difficult work, low salary, lack of challenge, and lack of respect for their work. These findings are consistent with previous research findings.[8, 49-52]

5. FACTORS INFLUENCING ATTITUDES TOWARDS THE ELDERLY

A series of studies have reported a correlation between high educational levels and positive attitudes.[53-56] Adibelli and Kilic's research[53, 57] suggested that the level of positive attitudes towards older adults increases with higher levels of education, including university and graduate degrees. Similarly, some other studies have also indicated that participants with higher levels of education are more likely to exhibit more positive

attitudes than those with lower levels of education. This shows that developing educational strategies that focus on meeting the needs of the elderly and motivating healthcare workers to engage in elderly care work is of great value.[38, 39, 53, 56, 58]

The team's research found that the relationship and frequency of contact with the elderly are two important factors that affect the attitude of rehabilitation students towards the elderly and their willingness to engage in elderly rehabilitation.[28] Other studies have also reported consistent results.[24, 59] Frequent contact with elderly people helps students gain more opportunities to interact and socialize with them, thereby establishing closer relationships with them.[24, 59] Leung et al. also found that healthcare workers who have social contact with healthy elderly people on a weekly basis have a more positive attitude towards the elderly than those who have contact less frequently than once a week.[56] Negative experiences of interacting with elderly people often have a negative impact, leading to the formation of negative attitudes.[18]

Hweidi and Al Hassan's research showed that nurses who live with one or more elderly relatives have a more positive attitude towards the elderly than those who do not live with elderly relatives.[53] The research also found that students who have experienced being cared for by grandparents, living with elderly people, and taking care of elderly people show significantly more positive attitudes towards the elderly compared to students who have not had these experiences, and have a stronger willingness to engage in elderly rehabilitation work.[28] Studies have shown that the experience of living with elderly people has a positive impact on forming a positive attitude towards them[8, 60]. Living with the elderly and being taken care of by grandparents can bring different experiences to young people. Actual contact with elderly people can affect their impression of them. Being taken care of by the elderly from a young age may help establish full trust in them, thereby forming a positive attitude and eliminating stereotypes or misunderstandings of the elderly among rehabilitation students. Meanwhile, China's long-standing cultural beliefs and social customs may also be important factors.[14, 24] Perhaps influenced by centuries of Confucianism, in traditional Chinese culture, the elderly are highly respected, valued, and supported. From a young age, children are taught to love, respect, and care for their elderly family members.[14, 24] The culture of respecting and caring for the elderly may have

influenced Chinese students' attitudes towards the elderly and their willingness to engage in elderly related work.

In addition, studies have shown a significant relationship between past work experience and knowledge and attitudes towards older adults. Engstrom and Fagerberg pointed out that participants who have worked in the healthcare field for over 21 years have a more positive attitude towards older adults than those with less work experience.[55] Similarly, other studies suggest that doctors who hold a more positive attitude towards the elderly tend to work more with them, and their experiences in elderly care may also contribute to the formation of their positive attitude.[55, 56, 61] Of course, some studies have also found that there is no significant difference between the length of service of healthcare workers in their current positions and their positive attitudes.[14, 62]

In terms of gender, literature reports are still inconsistent. A study in Australia found that female doctors exhibit more positive attitudes than male doctors.[13] The author's team and other research teams have also shown that women exhibit more positive attitudes towards older adults compared to men, which may indicate that women are more caring than men.[2, 19, 28, 63, 64] However, a study suggests that male nurses working in acute care departments have a more positive attitude towards the elderly compared to female nurses.[53] The reason for this is believed to be that women often need to take care of both their husband's parents and their own children, and this multiple responsibility may lead to negative attitudes towards the elderly among female nurses in Jordan.[53] Hweidi IM et al. also found that men have a more positive attitude towards the elderly.[65] Zverev Y[66] believed that there is no difference in attitudes towards the elderly between men and women. These different research findings may need to be explained by different cultural and professional backgrounds.

6. CONCLUSION

With the increasing trend of population aging, improving the understanding and acceptance of the elderly by medical and health students has become a key link in promoting the improvement of the quality of elderly medical services in the future. This review indicates that students' attitudes towards the elderly, their level of knowledge about aging, and their willingness to engage in elderly related work are interrelated and jointly influenced

by multiple variables such as educational background, practical experience, and cultural factors. Currently, although many students hold a certain degree of positive attitude towards the elderly, their willingness to engage in elderly healthcare work is still low due to a lack of knowledge, stereotypes, and insufficient career attractiveness. Therefore, in the future, it is necessary to systematically strengthen the curriculum of geriatric medicine in the education system, actively create practical opportunities for interaction with the elderly, and reshape the social value and career prospects of the geriatric medical profession through publicity and policy guidance. Only by taking multiple measures can people effectively enhance the elderly care competence of the new generation of medical staff and lay a solid foundation for building a medical system that actively responds to the aging society.

ACKNOWLEDGMENTS

Funding: This work was supported by Chongqing Education Commission Humanities and Social Sciences Research Project(22SKGH544) and Scientific Research Program of Chongqing Medical and Pharmaceutical College(ygz2021208). The funding bodies did not play any roles in the design of the study, data collection, analysis, data interpretation, or writing of the manuscript.

REFERENCES

- [1] F.M. Martinez-Arnau, L. Lopez-Hernandez, E. Castellano-Rioja, et al., Interventions to improve attitudes toward older people in undergraduate health and social sciences students. A systematic review and meta-analysis. *Nurse Educ Today*, 2022. 110: p.105269.
- [2] L. Lopez-Hernandez, F.M. Martinez-Arnau, E. Castellano-Rioja, et al., Factors Affecting Attitudes towards Older People in Undergraduate Nursing Students. *Healthcare (Basel)*, 2021. 9(9).
- [3] A. Demirtas and T. Basak, Daily life activities simulation: Improving nursing students' attitudes toward older patients. *Jpn J Nurs Sci*, 2021. 18(1): p.e12375.
- [4] M. Rababa, T. Al-Dwaikat, and M.H. Almomani, Assessing knowledge and ageist attitudes and behaviors toward older adults

- among undergraduate nursing students. *Gerontol Geriatr Educ*, 2021. 42(3): p.347-362.
- [5] A. Coffey, C. Buckley, U. Gaidys, et al., Beliefs of students about growing older and perceptions of working in gerontology. *Nurs Older People*, 2015. 27(1): p.33-7.
- [6] J. Gong, G. Wang, Y. Wang, et al., Nowcasting and forecasting the care needs of the older population in China: analysis of data from the China Health and Retirement Longitudinal Study (CHARLS). *Lancet Public Health*, 2022. 7(12): p.e1005-e1013.
- [7] X. Chen, J. Giles, Y. Yao, et al., The path to healthy ageing in China: a Peking University-Lancet Commission. *Lancet*, 2022. 400(10367): p.1967-2006.
- [8] S. Rathnayake, Y. Athukorala, and S. Siop, Attitudes toward and willingness to work with older people among undergraduate nursing students in a public university in Sri Lanka: A cross sectional study. *Nurse Educ Today*, 2016. 36: p.439-44.
- [9] S. Ghimire, N. Shrestha, K.E. Callahan, et al., Undergraduate nursing students' knowledge of aging, attitudes toward and perceptions of working with older adults in Kathmandu Nepal. *Int J Nurs Sci*, 2019. 6(2): p.204-210.
- [10] S. Sun, X. Lin, X. Ouyang, et al., Education and development of rehabilitation therapy in China under the background of aging. *Front Public Health*, 2022. 10: p.1000048.
- [11] S.A. Van Wicklin, Ageism in Nursing. *Plast Surg Nurs*, 2020. 40(1): p.20-24.
- [12] D. Adibelli and D. Kilic, Difficulties experienced by nurses in older patient care and their attitudes toward the older patients. *Nurse Educ Today*, 2013. 33(9): p.1074-8.
- [13] A. Oksuzyan, A. Hohn, J. Krabbe Pedersen, et al., Preparing for the future: The changing demographic composition of hospital patients in Denmark between 2013 and 2050. *PLoS One*, 2020. 15(9): p.e0238912.
- [14] Y. Yang, L.D. Xiao, S. Ullah, et al., General practitioners' knowledge of ageing and attitudes towards older people in China. *Australas J Ageing*, 2015. 34(2): p.82-7.
- [15] M. Matarese, M. Lommi, C. Pedone, et al., Nursing student attitudes towards older people: validity and reliability of the Italian version of the Kogan Attitudes towards Older People scale. *J Adv Nurs*, 2013. 69(1): p.175-84.
- [16] S.E. Mason and G.R.J.J.o.G.S.W. Sanders, Social Work Student Attitudes on Working with Older Clients. 2004. 42(3-4): p.61-75.
- [17] M. Rababa, A.M. Hammouri, I.M. Hweidi, et al., Association of nurses' level of knowledge and attitudes to ageism toward older adults: Cross-sectional study. *Nurs Health Sci*, 2020. 22(3): p.593-601.
- [18] S.S. Celik, S. Kapucu, Z. Tuna, et al., Views and Attitudes of Nursing Students Towards Ageing and Older Patients. 2010. 27(4): p.24-30.
- [19] O. Soderhamn, C. Lindencrona, and S.M. Gustavsson, Attitudes toward older people among nursing students and registered nurses in Sweden. *Nurse Educ Today*, 2001. 21(3): p.225-9.
- [20] Y.E. Liu, I.J. Norman, and A.E. While, Nurses' attitudes towards older people: a systematic review. *Int J Nurs Stud*, 2013. 50(9): p.1271-82.
- [21] L. Amrhein and G.M. Backes, [Images and discourses of ageing--annotations to the state of research]. *Z Gerontol Geriatr*, 2007. 40(2): p.104-11.
- [22] D.A. Bernardini Zambrini, M. Moraru, M. Hanna, et al., Attitudes toward the elderly among students of health care related studies at the University of Salamanca, Spain. *J Contin Educ Health Prof*, 2008. 28(2): p.86-90.
- [23] J. Duthie, M.J.P. Donaghy, and O.T.i. Geriatrics, The Beliefs and Attitudes of Physiotherapy Students in Scotland Toward Older People. 2009. 27(3): p.245-266.
- [24] X. Lan, Q. Chen, and B. Yi, Attitude of Nurses Toward the Care of Older Adults in China. *J Transcult Nurs*, 2019. 30(6): p.597-602.
- [25] A. McKinlay and S. Cowan, Student nurses' attitudes towards working with older patients. *J Adv Nurs*, 2003. 43(3): p.298-309.
- [26] H. Omana, A. Sureshkumar, M. Aijo, et al., Attitudes and Beliefs of Physical Therapists and Physical Therapist Students Toward

- Working With Older Adults: A Systematic Review. *Phys Ther*, 2024. 104(7).
- [27] D.J. Jester, K. Hyer, A. Wenders, et al., Attitudes toward aging of health professions students: Implications for geriatrics education. *Gerontol Geriatr Educ*, 2021. 42(4): p.589-603.
- [28] Y. Zhang, L. Pang, L. Tan, et al., Knowledge of aging, attitudes toward older people and willingness to engage in geriatric rehabilitation among rehabilitation students in southwestern China: a cross-sectional study. *BMC Med Educ*, 2024. 24(1): p.1120.
- [29] S.S.J.E.G. Boswell, "Old People are Cranky": Helping Professional Trainees' Knowledge, Attitudes, Aging Anxiety, and Interest in Working with Older Adults. 2012. 38(7): p.465-472.
- [30] V. Boudjemad and K. Gana, Ageism: adaptation of the Fraboni of Ageism Scale-Revised to the French language and testing the effects of empathy, social dominance orientation and dogmatism on ageism. *Can J Aging*, 2009. 28(4): p.371-89.
- [31] E. Palmore, Facts on aging. A short quiz. *Gerontologist*, 1977. 17(4): p.315-20.
- [32] B.J. King, T.J. Roberts, and B.J. Bowers, Nursing student attitudes toward and preferences for working with older adults. *Gerontol Geriatr Educ*, 2013. 34(3): p.272-91.
- [33] L.J. Allan and J.A.J.E.g. Johnson, Undergraduate attitudes toward the elderly: The role of knowledge, contact and aging anxiety. 2008. 35(1): p.1-14.
- [34] B. Funderburk, J. Damron-Rodriguez, L.L. Storms, et al., Endurance of undergraduate attitudes toward older adults. 2006. 32(6): p.447-462.
- [35] R. Klaghofer, C. Buddeberg, M. Schleuniger, et al., [Attitudes toward older people at the beginning and end of medical students' education]. *Z Gerontol Geriatr*, 2009. 42(5): p.365-71.
- [36] C. Hobbs, C.M. Dean, J. Higgs, et al., Physiotherapy students' attitudes towards and knowledge of older people. *Aust J Physiother*, 2006. 52(2): p.115-9.
- [37] J. Dikken, A. Bakker, J.G. Hoogerduijn, et al., Comparisons of Knowledge of Dutch Nursing Students and Hospital Nurses on Aging. *J Contin Educ Nurs*, 2018. 49(2): p.84-90.
- [38] P. Mellor, D. Chew, and J. Greenhill, Nurses' attitudes toward elderly people and knowledge of gerontic care in a multi-purpose health service (MPHS). *Aust J Adv Nurs*, 2007. 24(4): p.37-41.
- [39] S. Alsenany and P.G.D. Anp, Student nurses' attitudes and knowledge towards the care of older people in Saudi Arabia. 2009.
- [40] S.C. Galera, E.F.d.A. Costa, R.R.J.G. Gabriele, Gerontology, et al., Medical Education in Geriatrics: Brazilian and global challenge. 2017. 11(2): p.88-94.
- [41] J. Mateos-Nozal, A.J. Cruz-Jentoft, and J.M.J.E.G.M. Ribera Casado, A systematic review of surveys on undergraduate teaching of Geriatrics in medical schools in the XXI century. 2014. 5(2): p.119-124.
- [42] A. McKinlay and S.J.J.o.A.S.P. Cowan, "If You're Frail You've Had It": A Theory of Planned Behavior Study of Student Nurses' Attitudes Towards Working with Older Patients. 2006. 36(4): p.900-917.
- [43] A. Kydd and D. Wild, Attitudes towards caring for older people: literature review and methodology. *Nurs Older People*, 2013. 25(3): p.22-7.
- [44] J.A. Stevens, Student nurses' career preferences for working with older people: a replicated longitudinal survey. *Int J Nurs Stud*, 2011. 48(8): p.944-51.
- [45] J.A. Stevens, A career with old people, do nurses care for it?: an enquiry into professional enhancement strategies. 1995, UNSW Sydney.
- [46] B. Happell, Nursing home employment for nursing students: valuable experience or a harsh deterrent? *J Adv Nurs*, 2002. 39(6): p.529-36.
- [47] B.J.J.o.N.E. Nienke and Practice, Dutch nursing students' knowledge and attitudes towards older people - A longitudinal cohort study. 2012. 2(2).
- [48] H. Peach, Career plans of student physical therapists regarding geriatric medicine. *Age Ageing*, 1978. 7(1): p.57-61.

- [49] J. Henderson, L. Xiao, L. Siegloff, et al., 'Older people have lived their lives': first year nursing students' attitudes towards older people. *Contemp Nurse*, 2008. 30(1): p.32-45.
- [50] S. Dahlke, S. Davidson, M.R. Kalogirou, et al., Nursing faculty and students' perspectives of how students learn to work with older people. 2020. 93: p.104537.
- [51] M. Algosio, K. Peters, L. Ramjan, et al., Exploring undergraduate nursing students' perceptions of working in aged care settings: A review of the literature. *Nurse Educ Today*, 2016. 36: p.275-80.
- [52] F. Dai, Y. Liu, M. Ju, et al., Nursing students' willingness to work in geriatric care: An integrative review. *Nurs Open*, 2021. 8(5): p.2061-2077.
- [53] I.M. Hweidi and M.A. Al-Hassan, Jordanian nurses' attitudes toward older patients in acute care settings. *Int Nurs Rev*, 2005. 52(3): p.225-32.
- [54] N.M. Zakari, Attitudes toward the elderly and knowledge of aging as correlates to the willingness and intention to work with elderly among Saudi nursing students. 2005: George Mason University.
- [55] G. Engström and I.J.N.R. Fagerberg, Attitudes towards older people among Swedish health care students and health care professionals working in field care. 2011. 1(1): p.2-6.
- [56] S. Leung, D. Logiudice, J. Schwarz, et al., Hospital doctors' attitudes towards older people. *Intern Med J*, 2011. 41(4): p.308-14.
- [57] D.J. Plonczynski, L. Ehrlich-Jones, J.F. Robertson, et al., Ensuring a knowledgeable and committed gerontological nursing workforce. *Nurse Educ Today*, 2007. 27(2): p.113-21.
- [58] Y.E. Liu, I.J. Norman, and A.E. While, Nurses' attitudes towards older people and working with older patients: an explanatory model. *J Nurs Manag*, 2015. 23(8): p.965-73.
- [59] L.D. Xiao, J. Shen, and J. Paterson, Cross-cultural comparison of attitudes and preferences for care of the elderly among Australian and Chinese nursing students. *J Transcult Nurs*, 2013. 24(4): p.408-16.
- [60] S. Swanlund and A. Kujath, Attitudes of baccalaureate nursing students toward older adults: a pilot study. *Nurs Educ Perspect*, 2012. 33(3): p.181-3.
- [61] A. Coffey and N. Whitehead, Healthcare assistants' attitudes towards older people and their knowledge about ageing. *Nurs Older People*, 2015. 27(1): p.24-30.
- [62] M. Doherty, E.A. Mitchell, and S. O'Neill, Attitudes of Healthcare Workers towards Older People in a Rural Population: A Survey Using the Kogan Scale. *Nurs Res Pract*, 2011. 2011: p.352627.
- [63] E. Lambrinou, P. Sourtzi, A. Kalokerinou, et al., Attitudes and knowledge of the Greek nursing students towards older people. *Nurse Educ Today*, 2009. 29(6): p.617-22.
- [64] A.C. Lee, A.K. Wong, and E.K. Loh, Score in the Paltmore's Aging Quiz, knowledge of community resources and working preferences of undergraduate nursing students toward the elderly in Hong Kong. *Nurse Educ Today*, 2006. 26(4): p.269-76.
- [65] I.M. Hweidi and S.M. Al-Obeisat, Jordanian nursing students' attitudes toward the elderly. *Nurse Educ Today*, 2006. 26(1): p.23-30.
- [66] Zverev and Y.J.E. Gerontology, Attitude Towards Older People Among Malawian Medical and Nursing Students. 2013. 39(1): p.57-66.