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Front Pages

Athens Journal of Health and Medical Sciences

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The ***Athens Journal of Health and Medical Sciences (AJHMS)*** is an Open Access quarterly double-blind peer reviewed journal and considers papers from all areas of medicine (including health studies and nursing research). Many of the papers published in this journal have been presented at the various conferences sponsored by the Health & Medical Sciences Division of the Athens Institute for Education and Research (ATINER). All papers are subject to ATINER's Publication Ethical Policy and Statement.

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Athens Journal of Health and Medical Sciences
Editorial and Reviewers' Board

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The current issue is the first of the eleventh volume of the *Athens Journal of Health and Medical Sciences* (AJHMS), published by the **Health & Medical Sciences Division of ATINER.**

Gregory T. Papanikos
President
ATINER

Athens Institute for Education and Research

A World Association of Academics and Researchers

23rd Annual International Conference on Health Economics, Management & Policy, 24-27 June 2024, Athens, Greece

The Health Economics & Management Unit of ATINER will hold its **23rd Annual International Conference on Health Economics, Management & Policy, 24-27 June 2024, Athens, Greece s**ponsored by the Athens Journal of Health and Medical Sciences. The aim of the conference is to bring together academics, researchers and professionals in health economics, management and policy. You may participate as stream leader, presenter of one paper, chair of a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2024/FORM-HEA.doc).

Academic Members Responsible for the Conference

- **Dr. Paul Contoyannis**, Head, Health Economics & Management Unit, ATINER & Associate Professor, McMaster University, Canada.
- **Dr. Vickie Hughes**, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.

Important Dates

- Abstract Submission: **5 March 2024**
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **27 May 2024**

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The Social Program Emphasizes the Educational Aspect of the Academic Meetings of Atiner.

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- Athens Sightseeing: Old and New-An Educational Urban Walk
- Social Dinner
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Athens Institute for Education and Research

A World Association of Academics and Researchers

12th Annual International Conference on Health & Medical Sciences
6-9 May 2024, Athens, Greece

The Medicine Unit of ATINER is organizing its **12th Annual International Conference on Health & Medical Sciences, 1-4 May 2023, Athens, Greece** sponsored by the Athens Journal of Health and Medical Sciences. The aim of the conference is to bring together academics and researchers from all areas of health sciences, medical sciences and related disciplines. You may participate as stream leader, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2024/FORM-HSC.doc).

Important Dates

- Abstract Submission: **26 March 2024**
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **8 April 2024**

Academic Member Responsible for the Conference

- **Dr. Vickie Hughes**, Director, Health & Medical Sciences Research Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
- **Dr. Carol Anne Chamley**, Head, Nursing Research Unit & Associate Professor, School of Health and Social Care, London South Bank University UK.
- **Dr. Andriana Margariti**, Head, Medicine Research Unit, ATINER & Lecturer, Centre for Experimental Medicine, Queen's University Belfast, U.K.

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What Multi-Level Solutions Can Enhance the Financial Literacy of Healthcare Professionals in Kenya?

By Fiona-Hope A. Mtula[*], Barbara Son[±] & Francis Wambalaba[°]

Financial literacy is a crucial asset within the human capital pool, whether individuals are working within or outside the hospital setting. Professionals in various fields benefit from financial literacy, and the main recipients include individuals, the broader economy, businesses, and the overall financial system. In the context of medical professionals, the expectation is often that they make informed business decisions and effectively manage healthcare facilities. However, a notable challenge is the potential lack of essential skills in financial literacy among these professionals. In Kenya, a considerable number of healthcare professionals face a deficiency in financial literacy skills, hindering their ability to proficiently handle even small businesses in private practices and oversee financial matters in hospital departments, both in public and private healthcare facilities. Consequently, the objective of this study is to present healthcare professionals with a roadmap to identify and address gaps to enhance their financial literacy. A survey was conducted from June to July 2023, involving 339 doctors, including medical doctors, dentists, and pharmacists. The findings were interesting concerning gender performance and global comparisons. Unlike previous studies, female doctors demonstrated a higher financial knowledge, behavior, and attitude, suggesting a well-rounded financial proficiency compared to their male counterparts. At the global level, the descriptive analysis revealed strong financial knowledge, positive attitudes, and prudent financial behaviors among the Kenyan participating doctors compared to the OECD global averages. For example, unlike the OECD global average of 52.5% in financial knowledge and literacy, the findings for the Kenyan counterparts stood at 77%; while the OECD global average for financial attitude was 70%, that of the Kenyan counterparts was at 75%; and compared to the OECD global average of prudent financial behavior of 59%, that of the Kenyan counterparts was 69%. It seems that socio-demographic factors, coupled with financial knowledge, attitudes, and behaviors, intricately influence the financial literacy of healthcare professionals. The findings highlight the importance of implementing multi-level solutions to enhance overall financial literacy among healthcare professionals. These solutions include tailored financial programs, self-paced online courses with interactive elements, and the integration of financial literacy into medical undergraduate and postgraduate training curricula.

Keywords: *healthcare professionals, financial literacy, Kenya, multi-level solutions*

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Introduction

Financial literacy has been defined as a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being (OECD 2020). Financial literacy holds importance in the healthcare sector where practitioners inevitably transition into managerial roles, and the integration of financial acumen becomes imperative (Millen and Stacey 2022). Financial literacy is required for them to be able to manage the limited financial resources allocated to the county health sector (Ministry of Health 2018, 2022). Despite their expertise, healthcare professionals often lack formal financial education in their training curriculum, prompting a need for the incorporation of financial training in medical education (Safarani et al. 2018). The multifaceted nature of financial literacy, including knowledge, behavior, and attitude, emphasizes its role in personal and professional advancement. This emphasizes their interconnectedness and influence on individual financial well-being (OECD 2005, 2020, 2014).

In the healthcare context, the financial literacy of professionals becomes integral to effective management, especially in the face of privatization trends and evolving healthcare systems. Financial management skills are crucial for successful private practices, where practitioners must navigate pricing, costing, and budgeting decisions. Financial management is a determining factor in the success of privatized hospitals (Khosravi et al. 2022, Torkzad and Beheshtinia 2019, Sepehri 2014, Sohrabi et al. 2021). Researchers and policymakers have shown interest in financial literacy among healthcare professionals (Cawyer et al. 2022, Payne et al. 2020, Lall et al. 2019, Bar-Or et al. 2018, Connelly and List 2018). They all show a gap and a need for improvement in financial literacy levels. They also show a policy gap and an educational gap when it comes to financial education (Atkinson and Messy 2013). Cawyer et al. (2022) demonstrate a willingness for physicians to improve their financial knowledge if presented with the opportunity. Studies carried out in the United States have been found to have a poor credit score, a deficiency in the scope of financial principles, and low levels of long-term savings. Furthermore, they were found to be overwhelmed with large amounts of student debt (Ahmad et al. 2017). Cawyer et al. (2022) found a positive correlation between financial literacy and a sense of well-being among Obstetricians and gynecologists. A poor sense of well-being has been shown to translate to worse patient outcomes (Escribe et al. 2022).

Among the developing countries, a large proportion of the research has been carried out in India. Among these studies, the overall levels of literacy are low (Agarwal and Biswas 2022, Sharma et al. 2021). In Africa, Millen and Stacey (2022) have looked at financial literacy among healthcare professionals showing lower levels of financial literacy than anticipated. This study is not aware of any studies on financial literacy among healthcare professionals in East Africa. The financial challenges faced by healthcare professionals, such as the burden of educational debt, underscore the need for enhanced financial literacy.

The study explores the financial management practices of healthcare professionals, considering their overall well-being (Sabri and Awc 2020). The

objective of this study is to present healthcare professionals with a roadmap to identify and address gaps in their financial literacy. The study specifically evaluated the relationship between social and demographic factors, financial knowledge, financial attitude, financial behavior, and financial literacy. Furthermore, this descriptive study provides a comprehensive understanding of the current financial literacy landscape among healthcare professionals in Kenya. By exploring the intricacies of financial knowledge, behavior, and attitudes, the research seeks to identify areas for improvement and inform targeted interventions to enhance the financial well-being of healthcare professionals in the country.

Literature Review

Social and Demographic Factors

Age, gender, geographical location, marital status, type and level of qualification, years of experience, and family income are significant correlations to the financial literacy status of an individual (Agarwal and Biswas 2022). Studies have found men are more financially literate than women in the healthcare profession (Agarwal and Biswas 2022, Jayakumar et al. 2017). Marriage has been observed to be a contributing factor to financial literacy (Akin 2021, Hsu 2016, Mashizha et al. 2019). Financial literacy among healthcare professionals has been shown to increase with years of experience (Agarwal and Biswas 2022). Furthermore, researchers have demonstrated no association difference in age groups and levels of financial literacy (Millen and Stacey 2022). Others have shown that financial literacy increases with age but later in the life cycle begins to decline (Klapper et al. 2015, Francisco et al. 2022, Mashizha et al. 2019).

Among healthcare professionals, there is a link between family income and financial literacy (Abolhallaj et al. 2021). Higher levels of income have been associated with higher levels of financial literacy (Nanziri and Leibbrandt 2018). Those in tertiary education have also been found to be 15 percent more financially literate than those in secondary school (Klapper et al. 2015). The healthcare profession is a highly specialized field and the number of specialties within each cadre is extensive. The type of specialization has been associated with the levels of financial knowledge. However, there was no influence of type of specialization on financial behavior and financial attitudes (Millen and Stacey 2022). Studies have linked higher levels of financial literacy with those living in urban areas (Francisco et al. 2022).

Financial Knowledge

Financial knowledge is a cognitive process that involves informational acquisition and expansion of knowledge involving financial principles and the instruments available (OECD 2020). Medical training programs often omit financial education (Connelly and List 2018). There is a positive relationship between financial education and financial knowledge (Kadoya and Khan 2020).

Financial knowledge enhances financial literacy and therefore enables an individual to buy financial products and services per their needs (Lusardi 2019, OECD 2022, Atkinson and Messy 2012).

Financial literacy often requires calculations that may vary from complex such as compound interest to simple such as simple interest (Peters et al. 2019, Lusardi and Mitchell 2011). The OECD/INFE questionnaire covers seven questions on various topics for non-experts. Each correct question is awarded 1 point and the total correct responses are summed up. A score of six or more indicates a high level of financial knowledge. The seven questions are related to financial concepts and basic calculations. These are division, the value of money over time, inflation, interest rate, simple interest calculation, compounded interest calculation, risk and return, and diversification of risk. Using this questionnaire as a tool, the OECD carried out a study on 4 continents spanning 14 countries on the financial literacy of the general adult population. No country achieved a population score exceeding seventy percent in terms of a high level of financial knowledge. Most countries had a population score of fifty percent or less (Atkinson and Messy 2012).

Financial Attitude

Financial attitude is an individual's judgment and opinions regarding finances (Ajzen 1991). It can be characterized as a set of beliefs that categorize an object as either positive or negative, influenced by an individual's perspectives or by the opinions of others (Culbertson 1968). Financial attitude varies from country to country even among high-performing economies (OECD/INFE 2016, OECD 2020). The behavior and attitudes of an individual are interlinked (Ajzen 1991). Studies done in India have found financial attitudes together with parental socialization and financial literacy to influence financial behavior in the youthful population (Bakar and Bakar 2020). People who have an adverse attitude towards saving for the future have a short-term view of money. People who have a preference for instant gratification with immediate spending are less likely to have emergency funds (Atkinson and Messy 2012, INFE 2012). Good financial attitudes have been linked to good financial management practices (Rajna et al. 2011, Yap et al. 2018). These financial management practices include beliefs in the repayment of borrowed money (Yap et al. 2018, Atkinson and Messy 2012). Financial attitudes together with financial literacy and good financial management practices have been shown to have a positive influence on financial satisfaction (Yap et al. 2018). Attitudes are shaped by an individual's experiences. Awareness of financial fraud has been linked to the presence of financial literacy (OECD 2020).

Financial literacy surveys have previously been done using the OECD /INFE questionnaire (Atkinson and Messy 2012, OECD 2014, 2020, 2022). They include 3 attitude questions which then gauge the respondents' attitudes towards finances. The respondents declare whether they agree or disagree with the statement scoring a five-point Likert scale ranging from completely agree to disagree (Correlate to 15) then a simple average is done. A high score is considered a score of 3 and above. The first question looks at whether one lives for today and has little

concern for tomorrow to test attitude on long-term financial planning. The second question looks at the level of satisfaction that one gets from saving money as opposed to spending it. This looks at the attitude toward long-term financial planning and saving. Lastly, it looks at the generic question of whether money is there to be spent. This also looks at the individual's attitude on long-term vs short-term financial planning. Such variations have been demonstrated to differ from one country to another. Millen and Stacey (2021) discovered that 37% of South African healthcare workers achieved the minimum financial attitude score.

Financial Behavior

Financial behavior has been defined as real-life human actions related to making financial decisions and doing financial activities (Shim et al. 2009). Behavior in the financial sector combines elements of managing cash flows, debts, saving funds, and investing in assets financial behavior has been shown to have the most impact on financial literacy levels (Rai et al. 2019). Financial behaviors give insight into financial decisions on a managerial level, individual level, or development of investment strategies (Gerth et al. 2021). Healthcare professionals experience a large leap in income and can have a difficult financial journey without a good knowledge base. Those with higher levels of financial literacy have been found to have a lower amount of debt (Payne et al. 2020). Borrowing behavior is higher among healthcare professionals than among the general population (Millen and Stacey 2022).

Saving and long-term planning are part of good financial management practices (OECD 2020). Timely bill payment is another financial behavior principle that was higher among financially literate individuals (OECD 2020, 2021). Digital literacy has been linked with higher levels of financial behavior (OECD 2020). Households with higher levels of financial literacy have been linked to better financial behavior. The OECD (2020) questionnaire covers 9 questions on behavior in finance. Each question is awarded one point for a correct response and a high score is considered a score of 6 and above with a maximum score of 9. The nine questions are the presence of careful consideration before purchase, timely bill payments, keeping watch of personal finances, long-term financial goal setting, being responsible as well as having a household budget, active saving and or buying investment, active saving and or buying investments after gathering knowledge, choosing products after shopping around with a knowledge base or financial advice and presence of borrowing to make ends meet**.**

Methods

Research Setting and Sampling

We employed a descriptive study design to gain insights into the diverse factors influencing the financial literacy of healthcare professionals in Kenya. The survey targeted doctors, including medical doctors, dentists, and pharmacists, and

spanned over two months, from June to July 2023. The study aimed to assess the impact of sociodemographic factors, evaluate the influence of financial knowledge and attitude, and determine the effect of financial behavior on financial literacy. A systematic analysis of these aspects played a crucial role in identifying and suggesting multilevel solutions to enhance financial literacy among healthcare professionals, thereby contributing to their overall financial well-being.

The study population consisted of Kenyan doctors, and data were extracted from retention registers maintained by regulatory bodies like the Kenya Medical and Dentistry Practitioners Board and Pharmacy and Poisons Board Kenya. Simple random sampling was employed to ensure the fair representation of all doctors within the population. The sample size, determined using Yamane's formula, amounted to a minimum of 392 participants.

Data Collection and Analysis

A structured questionnaire served as the primary data collection tool, featuring a web-based format for flexibility and wide reach. The questionnaire comprised sections on sociodemographic information, financial knowledge, financial behavior, and financial attitude. Likert scales were employed to assess financial behavior, financial knowledge, and financial attitudes. The online questionnaire, also available in hard copy for participants with technological constraints, was shared via email, direct messages, and WhatsApp. Before full-scale data collection, a pilot study was conducted to enhance questionnaire reliability. Ethical approval was obtained from the Institutional Review Board (IRB) at the United States International University (USIU) and the Kenya National Commission for Science, Technology, and Innovation (NACOSTI). The data analysis encompassed descriptive statistics, including means, standard deviations, medians, and interquartile ranges, to summarize continuous variables. Frequencies and percentages were used for categorical variables to provide a comprehensive summary.

Results

Out of the 394 questionnaires distributed, 339 were fully completed and error-free. The majority of respondents were female (58%). In terms of age distribution, 51% fell within the 26-35 age range, and 92% were between 26-45 years old. Regarding marital status, 56% were married, 35% were single, 4% were divorced/separated, 1% were widowed, 1% were cohabiting, 1% were dating, and another 1% were not sure. Regarding geographical zone, 86% were from urban areas. The distribution of medical cadres showed that 89% were medical doctors, 9% were pharmacists, and 2% were dentists. Notably, 57% possessed a master's degree, highlighting a high level of education among the respondents. Analysis of work experience revealed that 64% had 1-10 years of experience, and the distribution of income brackets indicated that a significant portion (45%) earned between 200,001-400,000 Kenya shillings. Overall, the study sample predominantly

comprised female, mid-career, married, urban-dwelling healthcare professionals, with medical doctors being the predominant cadre and a high level of educational attainment.

Socio-Demographic Factors and Financial Literacy

The analysis of demographic factors related to financial literacy (Table 1) reveals varying degrees of influence.

Table 1. *Descriptive Analysis of Socio-demographic Factors*

	Financial Knowledge		**Financial Attitude**		**Financial Behaviour**		**Financial Literacy**	
Demographic Characteristic	Std β (Std. Error)	Sig.	Std β (Std. Error)	Sig.	Std β (Std. Error)	Sig.	Std β (Std. Error)	Sig.
Gender	-0.007 (0.142)	0.962	-0.093 (0.15)	0.536	-0.641 (0.257)	0.013	-0.679 (0.431)	0.116
Age	0.261 (0.162)	0.108	-0.129 (0.17)	0.449	0.067 (0.292)	0.818	0.202 (0.49)	0.681
Marital Status	0.05 (0.109)	0.647	-0.008 (0.114)	0.941	0.193 (0.196)	0.325	0.268 (0.329)	0.417
Geographical Zone	-0.226 (0.186)	0.225	-0.464 (0.196)	0.018	-0.179 (0.336)	0.594	-0.957 (0.565)	0.091
Highest Level of Education	-0.164 (0.114)	0.152	0.195 (0.12)	0.103	-0.187 (0.205)	0.364	-0.199 (0.345)	0.565
Employment Status	0.179 (0.124)	0.15	-0.114 (0.13)	0.381	0.248 (0.224)	0.268	0.378 (0.376)	0.316
Medical Cadre	0.003 (0.109)	0.978	-0.076 (0.114)	0.505	0.358 (0.196)	0.069	0.302 (0.33)	0.361
Years of Working Experience	-0.077 (0.173)	0.655	0.11 (0.182)	0.544	-0.191 (0.311)	0.54	-0.198 (0.524)	0.706
Income Level	0.015 (0.068)	0.828	0.099 (0.072)	0.17	0.034 (0.123)	0.784	0.175 (0.207)	0.398
Model R^2	.025		.034		.039		.030	

Age, with a standardized beta coefficient of 0.261 (p = 0.108), and geographical zone, indicated by a standardized beta coefficient of -0.226 (p = 0.225), demonstrate noticeable but modest effects. On the other hand, factors such as gender, marital status, education level, employment status, medical cadre, years of working experience, and income level exhibit minimal impacts. These findings underscore the multifaceted nature of financial literacy and highlight the role that different demographic characteristics may play in shaping individuals' financial knowledge, attitude, and behavior.

Financial Knowledge and Financial Literacy

The descriptive analysis of financial knowledge (Table 2) provides a comprehensive evaluation of respondents' perspectives on fundamental financial concepts. Using Likert scale-based questions, the analysis categorizes responses into five levels, ranging from Strongly Disagree (SD) to Strongly Agree (SA). The study sheds light on diverse perceptions of financial knowledge among participants, enhancing the understanding of their financial literacy.

Table 2. *Descriptive Analysis of Financial Knowledge*

	SD	**D**	**N**	**A**	**SA**
	%	**%**	**%**	**%**	**%**
My present financial knowledge levels are good	5.6	11.5	46.6	26.5	9.7
If 4 brothers share ksh 1000 they will each get less than ksh 200	85.5	5.3	2.7	2.7	3.8
In one year from now, ksh 1000 will be able to buy more items than it can buy today	93.5	2.4	1.2	.3	2.7
If I borrow ksh.50 from a friend and repay ksh.50 in one week it will have gained interest	75.8	6.2	8.6	2.4	7.1
If I put ksh200 into a savings account with a guaranteed interest rate of 1% per year and I don't make any further payments into this account and I don't withdraw any money. At the end of the first year, I will withdraw the same amount.	76.4	10.3	5	3.5	4.7
Ksh 200 was initially deposited. It was subjected to 1% compound interest per year for five years. At the end of year 5, the amount would be more than Ksh 210	18	6.8	10.6	16.2	48.4
High inflation means that the cost of living is increasing rapidly	5.3	2.9	2.9	16.8	72
If someone offers you the chance to make a lot of money it is likely that there is also a chance that you will lose a lot of money	7.1	5.3	14.5	20.9	52.2
It is less likely that you will lose all of your money if you save it in more than one place	14.5	6.5	10.3	18.9	49.9
The personal data that I share publicly online may be used to target me with personalized commercial or financial offers	3.8	1.2	5	18.9	71.1
Financial Knowledge Threshold (6/10)		**60%**			
Proportion that met threshold (out of all participants)		**87%**			
Average financial knowledge levels		**77%**			

Note: "Financial Knowledge Threshold" refers to the predefined benchmark that was used to categorize participants' performance to questions assessing their financial knowledge (high financial knowledge vs low financial knowledge). The derived threshold of 6/10 for financial knowledge in the table is based on the OECD INFE methodology (2018), with a slight modification, signifying a benchmark for high financial knowledge among participants. Participants attaining a score of 6/10 and above (or above 60% of the maximum) had high financial knowledge. The "Average Financial Knowledge" (as presented in the table above) was computed by assigning a score of 1 for each correct response and 0 for incorrect responses across the 10 questions measuring financial knowledge. The total score for each participant was converted to a percentage of the maximum achievable score, and the resulting percentages were averaged to provide an overall representation of participants' financial attitudes. The questions were derived from the OECD/INFE questionnaire and guidance notes for conducting an internationally comparable survey on financial literacy (INFE 2012, OECD 2022).

Notably, participants expressed varying levels of confidence in their financial knowledge. While 46.6% were neutral about their current financial knowledge levels, 36.2% agreed, and 17.1% disagreed. A significant majority (90.8%) correctly disagreed with the statement that if four brothers share Ksh 1000, each would get less than Ksh 200. Similarly, 95.9% correctly disagreed with the idea that Ksh 1000 would buy more items in a year, emphasizing potential misconceptions about inflation.

The analysis reveals participants' challenges with certain financial knowledge concepts. For example, 82% correctly disagreed with the notion that borrowing Ksh 50 and repaying it in a week would accrue interest, indicating a lack of understanding about interest dynamics in the remaining participants. The analysis suggests a significant level of understanding regarding simple interest (86.7%). However, the concept of compound interest was less well understood, with 64.6% correctly agreeing with compounded interest over 5 years (Table 2). Regarding inflation, 88.8% correctly agreed that high inflation rapidly increases the cost of living. A majority (73.1%) agreed that potential gains come with potential losses in financial opportunities. Additionally, 68.8% believed that spreading money across multiple savings locations decreases the likelihood of losing all funds. The majority (90%) acknowledged that personal data shared online could lead to targeted commercial or financial offers.

Financial Attitude and Financial Literacy

The analysis of Financial Attitude (Table 3) offered a detailed portrayal of healthcare workers' perspectives on various financial attitude concepts. Utilizing a Likert scale, responses were categorized into five levels from strongly disagree to strongly agree, enabling a nuanced exploration of sentiments. Notable findings include a diverse stance on the purpose of money, with 40.1% neutral and varying views on preferences for immediate spending versus future savings. Participants overwhelmingly agreed (90.3%) on the responsibility of repaying borrowed money. Financial satisfaction exhibited a majority disagreement (72.3%).

Additionally, 22% admitted their financial situation is a barrier to their financial wants, emphasizing the link between financial well-being and contentment. A noteworthy aspect is the inclination to take financial risks, indicated by the 44.2% agreement, underlining the connection between financial literacy and a proactive approach to savings and investments. Overall, the study uncovered intricate relationships between financial attitudes and literacy among healthcare professionals, shedding light on the nuanced interplay of these factors for comprehensive financial well-being. Lastly, the majority of healthcare professionals (68.1%) agreed with the importance of ethical considerations in financial practices.

Table 3. *Descriptive Analysis of Financial Attitude*

	SD	**D**	**N**	**A**	**SA**
	%	**%**	**%**	**%**	**%**
Money is there for spending	14.5	16.5	40.1	20.4	8.6
I prefer living day by day and not worrying about tomorrow	52.2	22.7	14.7	6.2	4.1
I prefer spending money now rather than saving for the future	58.1	26.5	10.3	4.1	.9
If I borrow money, I have a responsibility to pay it back	.6	.3	1.2	7.7	90.3
I am satisfied with my present financial situation	47.2	25.1	18.9	6.8	2.1
I believe that banks should check the ethics of companies before providing them with banking services	4.1	5.3	22.4	22.1	46
I am prepared to risk some of my own money when saving or making an investment	.6	5.6	15.3	44.2	34.2
Because of my money situation, I feel like I will never have the things I want in life	36.9	22.7	18.3	10.6	11.5
Minimum financial attitude threshold (5/8)		**62.8%**			
Proportion that met threshold (out of all participants)		**70%**			
Average financial attitude levels		**75%**			

Note: "Financial Attitude Threshold" refers to the predefined benchmark that was used to categorize participants' performance to questions assessing their financial attitudes (high financial attitude vs low financial attitude). The "Average Financial Attitude" (as presented in the table above) was computed by assigning a score of 1 for each correct response and 0 for incorrect responses across the 8 questions measuring financial attitudes. The derived threshold of 5/8 for financial attitude in the table is based on the OECD INFE methodology (2018), with a slight modification, signifying a benchmark for high financial attitudes among participants. The total score for each participant was converted to a percentage of the maximum achievable score, and the resulting percentages were averaged to provide an overall representation of participants' financial attitudes. Participants attaining a score of 5/8 and above (or above 62.8% of the maximum) had a high financial attitude. The financial attitude questions were derived from the OECD/INFE questionnaire and guidance notes for conducting an internationally comparable survey on financial literacy (INFE 2012, OECD 2022).

Financial Behavior and Financial Literacy

The analysis of financial behavior (Table 4) presented a detailed portrayal of healthcare workers' perspectives on various financial behavior concepts. Using Likert scale-based questions ranging from 1 (strongly disagree) to 5 (strongly agree), the study explored various facets of participants' financial practices, including spending habits, budgeting, and bill payment. A significant portion of respondents indicated careful consideration of affordability before making purchases (51.9% strongly agree), and the majority affirmed paying bills on time (50.7% strongly agree). Healthcare workers demonstrated responsibility for day-to-day financial decisions (59% strongly agree) and often made plans to manage their income and expenses in various ways.

Table 4. *Descriptive Analysis of Financial Behavior*

	SD	D	N	A	SA
	%	%	%	%	%
Before I buy something I carefully consider whether I can afford it	1.5	5.9	15	25.7	51.9
I pay my bills on time	2.7	5.9	12.7	28	50.7
I watch my personal finance affairs closely	3.8	10	22.4	31	32.7
I have set long-term financial goals setting and I will strive to achieve them	5.3	9.1	21.8	31.9	31.9
I am responsible for day-to-day financial decisions(Household budget*)	.9	2.7	9.7	27.7	59
I have a household budget (Household budget*)	7.7	10	19.2	32.4	30.7
I make a plan to manage my income and expenses (Tracking income and expenditure**)	2.7	7.4	15	45.7	29.2
Keep a note of my spending (Tracking income and expenditure**)	6.2	20.4	23.9	32.4	17.1
I keep the money for bills separate from day-to-day spending money(Tracking income and expenditure**)	14.5	20.4	23.3	27.1	14.7
I make a note of upcoming bills to make sure I don't miss them (Tracking income and expenditure**)	7.7	13.3	15.3	37.5	26.3
I use a banking app or money management tool to keep track of my outgoings (Tracking income and expenditure**)	28.3	22.1	17.1	18.3	14.2
I arrange automatic payments for regular outgoings (Tracking income and expenditure**)	25.7	20.4	21.8	17.7	14.5
In the past 12 months, I have saved money in the following ways ***(Table 5)					
I believe decisions on saving are best made after seeking a knowledge base or financial advice	7.2	5.7	19	28.5	39.6
guided by a specialist I have borrowed money to make ends meet in the last 12 months	36.2	9.3	10.4	18.3	25.8
I am just getting by financially	16.2	14	29	22.4	17.9
Financial behavior threshold (9/15)		**60%**			
Proportion that met the threshold (out of all participants)		**79.7%**			
Average financial behavior levels		**69%**			

Note: "Financial Behavior Threshold" refers to the predefined benchmark that was used to categorize participants' performance to questions assessing their financial behavior (high financial behavior vs low financial behavior). The derived threshold of 9/15 for financial behavior in the table is based on the OECD INFE methodology (2018), with a slight modification, signifying a benchmark for high financial behavior among participants. Participants attaining a score of 9/15 and above (or above 60% of the maximum) had high financial behavior. The "Average Financial Behavior" (as presented in the table above) was computed by assigning a score of 1 for each correct response and 0 for incorrect responses across the 15 questions measuring financial behavior. The total score for each participant was converted to a percentage of the maximum achievable score, and the resulting percentages were averaged to provide an overall representation of participants' financial attitudes. *|**|***Some financial behavior questions had multiple options to ensure wide coverage. These questions were analyzed to give an individual score of 1 or 0 before the calculation of the individual averages. The financial behavior questions were derived from the OECD/INFE questionnaire and guidance notes for conducting an internationally comparable survey on financial literacy (INFE 2012, OECD 2022).

While a substantial proportion kept a note of their spending (49.5% strongly agree), fewer used banking apps or money management tools (32.5% strongly agree). The findings provide valuable insights into the financial behaviors of healthcare professionals, emphasizing the intersection between financial literacy and practical financial management. A significant proportion, 68.1%, of the participants acknowledged seeking knowledge or financial advice from a specialist when making saving decisions. Furthermore, a notable 44.1% of healthcare workers admitted to borrowing money, and 40.3% reported just getting by financially. These results reflect the interlinkage of financial literacy and financial well-being and highlight the need for targeted financial education and support initiatives. The participants' responses to the question on saving habits in the past 12 months revealed diverse financial behaviors (Table 5). Notably, 93.6% had utilized at least one of the savings options listed.

Table 5. *Methods of Saving over a 12-Month Period*

	SD	**D**	**N**	**A**	**SA**
	%	**%**	**%**	**%**	**%**
Saving cash at home or in my wallet	46.4	21.3	13.1	10.9	8.3
Paying money into an account	11.1	9.5	10.2	38.9	30.3
Buying bonds or time deposits	42.3	21.5	14	13.6	8.6
Investing in crypto-assets	69.7	17.6	9	1.8	1.9
Investing in stocks and shares	48.2	17	13.8	12.7	8.3
Saving or investing in some other way, other than a pension	15.2	7.2	10.9	37.3	29.4

Furthermore, 67.7% appropriately refrained from saving cash at home or in their wallets as the most suitable method. The majority of healthcare workers preferred saving by depositing money into an account (67.7%) and saving or investing in ways other than a pension (66.7%), indicating a preference for more secure savings methods. Only 3.7% expressed a preference for investing in cryptoassets. This study also revealed that only 22.2% bought bonds, and only 21% bought stocks or shares, showcasing varied approaches to financial planning and investment among the participants.

Discussion

Sociodemographic Characteristics and Financial Literacy

The study delved into the impact of sociodemographic factors on financial literacy among healthcare professionals. Both men and women exhibited high financial literacy, with women scoring slightly higher on average. This contrasts with other studies that identified being a male doctor or a male student as an independent factor for higher financial literacy (Millen and Stacey 2022, Jayakumar et al. 2017, Altan and Biçer 2017). Interestingly, female doctors in this study demonstrated higher financial knowledge, behavior, and attitude, suggesting a well-rounded financial proficiency among them.

In addition, the study identified the highest financial literacy in doctors between the ages of 45-55, after which financial literacy levels began to decline, aligning with findings in other studies conducted in developing countries (Klapper et al. 2015). Financial knowledge steadily increased from below the age of 25 up until 60 years, with a slight decline after 60, followed by a further increase beyond the age of 60. This contradicts studies suggesting that before the age of 61, an increase in age leads to higher financial knowledge, while after 61, the reverse is true (Francisco et al. 2022). In the present study, despite the increasing financial knowledge score, financial behavior and attitude declined beyond the age of 60, resulting in a lower overall financial literacy score. Francisco et al. (2022) proposed that beyond the age of 61, it is unlikely that individuals will attain the appropriate financial attitude, aligning with our findings. Similar to our study, they also identified two age ranges, 30-45 and 46-60, as increasing the probability of attaining an adequate level of financial literacy (Francisco et al. 2022).

Marital status demonstrated some influence, with married and divorced individuals showing higher financial literacy, possibly attributed to spousal support and increased financial responsibilities (Mashizha et al. 2019). However, widowed doctors in this study had lower financial attitudes, financial knowledge, financial behavior, as well as overall financial literacy. This contrasts with findings in other studies that have identified higher financial literacy levels among widowed women (Hsu 2016).

The study also found that urban-dwelling doctors exhibited higher levels of financial literacy than those in rural and other areas. Similar findings in other studies have suggested that this could be due to increased access to financial products and services in urban settings (Francisco et al. 2022, Lusardi and Mitchell 2011).

Working experience had a limited impact on overall financial literacy. There was an increase in average levels of financial literacy with an increase in years of experience up to 30 years, followed by a decline. This pattern aligns with other studies that have reported a positive association between financial literacy and years of experience (Agarwal and Biswas 2022). Additionally, there was a trending increase in financial knowledge levels with the level of income. However, income was found to contribute only slightly to financial literacy, consistent with the findings by Nanziri and Leibbrandt (2018).

The level of education was observed to have only a mild effect on financial literacy in this study. Similar research has indicated that unless the education is finance-related, the level of education may not necessarily correlate with financial literacy levels (Agarwal and Biswas 2022, Altan and Biçer 2017). Nevertheless, individuals with higher levels of education were found to have higher financial literacy.

Financial Knowledge and Financial Literacy

The participants demonstrated a robust financial knowledge, averaging 77%, which surpasses the OECD (2020) global average where only 52.5% of participants attained the minimum threshold for their study. The self-assessment of financial

knowledge revealed interesting patterns, as those confident in their financial understanding had higher compared to those unsure or self-assessing as having low knowledge. This phenomenon is believed to be associated with lower participation in financial markets among those with low self-assessment (Salvatore et al. 2017). The study also conducted a focused examination of doctors' financial numeracy through five questions, revealing a high level of proficiency among participants. Notably, over 90% correctly answered questions related to sharing funds among siblings, the impact of inflation on the cost of living, and the time value of money. Furthermore, the majority expressed confidence in their responses, emphasizing a robust understanding of these financial concepts.

The study's assessment of doctors' knowledge of risk and return, as well as risk and diversification, revealed a solid understanding of these financial concepts among the majority of participants. Specifically, 73% correctly acknowledged the association between the opportunity for significant financial gains and the likelihood of substantial losses, while 69% recognized the importance of diversification in reducing the risk of losing all invested money. These results align with global studies indicating higher proficiency in risk and return compared to risk and diversification (77-79% on risk and 58-63% on risk and diversification), highlighting the significance of these factors in effective retirement planning (OECD 2020, Lusardi and Mitchell 2011). In the assessment of financial knowledge on interest, the findings align with broader trends suggesting a decline in knowledge as the financial concept becomes more complex. This reinforces the importance of targeted financial education efforts (OECD 2020, OECD/INFE 2016). The results indicate the need for focused educational initiatives to enhance understanding, especially in areas where complexity might pose challenges to individuals' financial literacy.

Financial Attitude and Financial Literacy

The average financial attitude attained among participants was 75%, surpassing the 70% OECD benchmark (OECD 2020). While this indicates a positive trend, it also suggests the ongoing need for improvement in fostering even more positive financial attitudes among healthcare professionals. The study delved into health workers' attitudes toward taking financial risks, revealing that 78% had positive attitudes in this regard. This is under the importance of tailoring financial guidance to align with individual risk tolerance levels, helping healthcare professionals make informed financial decisions (Despard et al. 2020). Additionally, the study highlighted that 74.9% of healthcare professionals showed a preference for long-term planning over immediate concerns, and 84.6% expressed a willingness to prioritize saving for the future over immediate spending. These findings indicate a noteworthy inclination among doctors toward prioritizing long-term financial planning and savings (Atkinson and Messy 2012). It suggests a positive orientation towards securing financial well-being over time, emphasizing the importance of considering future financial goals and objectives.

This study found that 73% of doctors expressed dissatisfaction with their financial situations. This surpasses the OECD's (2020) average of 40%, highlighting

potential challenges and areas for improvement in addressing their financial wellbeing. Furthermore, a significant majority (68%) believed that banks should assess the ethics of companies before offering them banking services, emphasizing the importance of ethical considerations in financial decisions. However, concerning financial well-being, 40% of surveyed doctors indicated negative sentiments, disagreeing with the statement that their money situation hinders them from achieving the things they desire in life. This reveals potential challenges in achieving financial fulfillment and life choices among this demographic, contrasting with previous studies that suggested that most people tend to be neutral (OECD 2020).

Financial Behavior and Financial Literacy

Among doctors, the study found that the average financial behavior attained was 69%, with an impressive 79.7% of participants surpassing the financial behavior threshold, indicating generally positive financial behaviors. In comparison, the OECD (2020) reported a lower average financial behavior of 59% across 26 countries, with only 49% of adults meeting the minimum target for financial behavior. This suggests that doctors, as a group, exhibit more favorable financial behaviors than the global average. Specifically, the majority of doctors in the study (77.6%) considered affordability before making a purchase, indicating a high level of awareness about their spending. This surpasses the global average reported by the OECD (2020) at 70%. Financial organization behaviors, such as paying bills on time, were reported by 78.7% of doctors, aligning closely with the OECD (2020) average of 79.4%. However, the study also revealed that a significant majority of doctors (63.7%) keep a close watch on their finances, while 13.8% admit to not doing so. This highlights an opportunity for education on financial vigilance, emphasizing the importance of regular financial monitoring and awareness.

Regarding budgeting, the study found that 86.7% of doctors are responsible for day-to-day financial decisions, and 63.1% have a household budget, showcasing the positive impact of financial literacy on proactive financial management behaviors. Additionally, only 17.7% of the doctor participants disagreed with any form of financial tracking. This performance is better than the findings in South Africa, where 36% of healthcare workers did not have a budget (Millen and Stacey 2022). Moreover, 93% of participants engage in various savings practices, outperforming global averages (between 24% and 97%), suggesting a robust saving culture among Kenyan healthcare workers (Millen and Stacey 2022, Atkinson and Messy 2012). Sixty-eight percent of doctors believe in making informed financial decisions. However, 46% of doctors borrowed money to make ends meet, with financial literacy associated with more cautious borrowing habits. The findings indicate that while financial vigilance, goal-setting, and budgeting are areas of strength, there is room for improvement in some financial behaviors and attitudes among healthcare professionals in Kenya.

In this study, the majority of doctors (38%) make a plan to manage their income and expenses. However, only 17.5% are confident in keeping notes of

their spending, and less than 50% take note of upcoming bills or use banking apps for tracking outgoings. These findings highlight areas for improvement in financial tracking practices among healthcare professionals in Kenya, indicating a potential need for increased awareness and education on effective personal finance management (Atkinson and Messy 2012, Lusardi 2019, Lusardi and Mitchell 2011).

Conclusion

This study sheds light on the influence of sociodemographic factors on the financial literacy of healthcare professionals in Kenya. Notably, individuals aged below 60 years and those from urban geographical zones exhibit slightly better financial knowledge, attitudes, behaviors, and overall financial literacy. These findings underscore the importance of tailoring financial literacy interventions based on age-specific and region-specific considerations. However, factors such as gender, marital status, education level, employment status, medical cadre, years of experience, and income level have minimal impact on financial literacy. Notably, Kenyan women doctors in this study had higher financial attitudes, financial knowledge, and financial behavior scores destabilizing the notion previously stated that being male is an independent factor for high financial literacy. Similarly, the study showed strong financial knowledge, positive attitudes, and prudent financial behaviors among the Kenyan participating doctors compared to the OECD global averages. Nonetheless, by recognizing and accommodating the diverse needs and contexts of healthcare professionals, policymakers and educators can design targeted programs that resonate with the specific challenges and requirements faced by individuals in different sociodemographic groups. The study highlights a robust financial foundation being pivotal for informed decision-making across various financial domains, from basic monetary choices to intricate investment decisions. The linkage between financial knowledge and financial literacy emphasizes the need for multilevel solutions geared toward advancing financial education among healthcare professionals. Tailored interventions should be designed to bolster financial knowledge, equipping individuals with the skills necessary for adept financial management, risk mitigation, and the optimization of financial opportunities. This targeted approach aligns with the overarching goal of fostering comprehensive financial literacy within the healthcare workforce in Kenya.

Overall, this study's participants outperformed global averages from previous studies on financial attitude, financial knowledge, and financial behavior. The findings suggest a strong correlation between positive financial attitudes and higher levels of financial literacy among Kenyan healthcare professionals, highlighting the interconnected nature of these two aspects. Individuals with a high financial attitude tend to exhibit greater awareness of their financial goals and a drive for improvement. To enhance positive financial attitudes, integrating financial education into early education, and medical training curricula, and leveraging digital technologies can be effective. Sensitization programs and

targeted campaigns can further promote a positive financial attitude among healthcare professionals, contributing to a more financially resilient and informed workforce.

This study establishes the importance of promoting good financial behavior among healthcare professionals. The findings emphasize the significance of fostering comprehensive financial education to instill prudent and informed financial practices, covering aspects such as purchase considerations, bill payment, financial organization, decision-making, and proactive planning. To promote responsible financial habits, integrating financial curriculums into the professional training curriculum for healthcare workers and offering tailored programs that address their specific needs is beneficial. Policymakers have an opportunity to design targeted initiatives, leveraging digital tools for broader reach and effectiveness.

Our study was constrained to a cross-sectional design. To further understand the enduring effects of financial education initiatives on healthcare workers' financial knowledge and outcomes, future studies should delve into longitudinal research. Additionally, exploring the influence of cultural factors and personality traits on financial literacy is advised, building on the insights gained from our financial attitude findings. Finally, researchers should investigate how financial inclusion, encompassing access to financial services and instruments, impacts the financial behavior of healthcare professionals, taking into account the role of geographical location.

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Greek People, the Orthodox Religion and Resilience in the Time of Crisis

By Maria Irini Avgoulas[*] & Rebecca Fanany[±]

This paper examines the role of religion in supporting health and the significance this has on emotional wellbeing in time of crisis for individuals of Greek Australian background. Melbourne, Australia, has a large Greek community whose oldest members were born in Greece and emigrated to Australia 50-60 years ago. The children and grandchildren of these immigrants were born in Australia but often see themselves as members of a cultural community distinct from the English-speaking mainstream. In addition to language, one of the most significant cultural factors handed down by the immigrant generation is a belief in the importance of religion and religious rituals in maintaining health. These rituals and beliefs are also a powerful tool for coping in times of crisis, illness and other challenges. Its findings are based on several qualitative studies undertaken in Melbourne between 2011-2016. The individuals that participated in these studies relied on religious faith and traditional practices to support them in times of crisis. Their specific beliefs reflect orthodox theology but also folk practices specific to this community and can be applied to wellbeing and resilience shown by this population in times of crisis. They have a strong belief in destiny and generally accept that God provides the means for addressing negative conditions. This paper describes the nature of their beliefs and outlines the ways in which religion serves as the basis for their resilience and ability to cope with adversity.

Keywords: *Greek people, Orthodox religion, faith, resilience, crisis*

Introduction, Background and Methodology

The journey of Greek migration to Australia dates back to 1827, however the vast majority of Greek people arrived between 1945 and 1982, searching for a new beginning in the "lucky country," – "the country of opportunity" as they referred to, and viewed Australia. This process was made possible by the Assisted Passage Agreement that was made by the Greek and Australian governments in 1952 that opened the way for the Greek people to first migrate to Australia and then for the City of Melbourne become home to the world's largest population of Greek people outside of Greece, and this is still the fact now, in 2021.

In addition to integrating into Australian society, the migrants and their Australian born descendants have maintained a strong cultural identity that includes strong links to their ancestral country, to the Greek language and to their faith the Greek Orthodox religion (for further discussion on this, see Tamis 2005).

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Generally, faith and the Greek Orthodox religion has been significant as a means of support and an ingredient of resilience for both the Greek migrants and their descendants too (Avgoulas and Fanany 2015).

The majority of Greek migrants to Australia arrived with a firsthand experience of war. Greece had been occupied by the German-Italian forces during World War II and this was followed by the Greek civil war. Despite their aspiration for a new start life, many of these migrants saw the move to Australia as a temporary measure. Most intended to return to Greece at some time, having achieved a measure of success in Australia that would allow them to settle in their native land. For most, this did not become reality, and then ended up staying permanently in their new home. This has generated mixed emotions. On the one hand, older migrants often note wistfully that, "Unfortunately we could not go back." Nonetheless, many of them are remarkably positive and consider that they may have been luckier than those who stayed behind in Greece, commenting, "Look at Greece now and those that live there. We are luckier here." or "All they have is the sun, water and the Greek land. We have it all here just go to Oakleigh. It's Greece in Melbourne." Oakleigh is a Melbourne neighbourhood that offers a large number of Greek businesses and services. Others simply note that, "Australia was good to us." This same view is sometimes echoed by Greeks who remained in their native land, especially in the todays context of economic problems: "You're a lucky one. You left and gave a future to your children – you made a life for yourself and for your children. Look at us here. We have nothing, and our children have no future."

For the original migrant generation, as well as for their descendants, Australia became home, and they became acculturated to the English-speaking context. They came to refer to Australia as their second country or 'patrida' ("Αυστραλία η δεύτερη πατρίδα"). The vast majority of migrants had few possessions and were not well-educated. They came from largely rural backgrounds and were unskilled. They did bring a store of traditional knowledge, views, and behavior that they made great efforts to pass on to their descendants, as the essence of their 'Greekness,' and that were gradually adapted to the Australian context.

The early years of settlement in Australia were difficult for the Greek people overall. Their positive outlook and resilience derived from their traditional culture and religious faith along with the view that maintaining their Greek ways would allow them to prosper. This knowledge, in particular, gave them strength and resilience in diaspora. As compared to other cultural groups in the multicultural Australian society, the Greek community has shown a unique level of attachment to their homeland which confers a sense of belonging (Kaloudis 2006). This has been supportive in the process of adaptation and acculturation and, for the original migrants, provided a refuge from the pressures of integration into the English-speaking mainstream.

Culture plays an important role in the life of individuals and populations and serves as a lens through which health, wellbeing and the experience of illness is perceived. The experiences of specific immigrant communities and the significance of cultural identity in overall wellbeing has been discussed extensively in the literature (see, for example, Lopez-Class et al. 2011, Unger and Schwartz 2012). The experience of migration is life changing, for the immigrants themselves and

also for their decedents. There is often little time for adjustment, and the attendant anxiety may also contribute to a number of health problems (Pumariega et al. 2005). However, migration and the nature of the associated experiences are difficult to predict and may be different for each individual (Berry and Kim 1988). It has also been noted that there are links between the journey of migration the experience of acculturation and the overall health of migrants (Miranda et al. 2011, Organista et al. 2003, Salant and Lauderdale 2003, among others).

This paper will explore the area of migration and health, in particular health and wellbeing will be discussed, and life in people of Greek origin before and after migration to Australia. Incorporating post migration participants that were in fact descendants of the original migrants, and how this can and has been a positive ingredient in time of crisis. Each participant was interviewed about their experiences, and the resulting texts were analyzed using the narrative approach to ethnographic study outlined by Savage (2006). One of the authors of this study, M-I Avgoulas, is a member of the Greek community in Melbourne and occupied a position as both an insider and outsider. For this reason, it was possible to carry out the interviews in Greek and for an emic and etic perspective to be identified (see Ong 1993, Savage 2006, among others). The discussion presented below consists of four sections: Health and Wellbeing in Greece before Migration; Greece after migration; Health and Wellbeing in Greece compared to Australia; and Life in Australia, migration and health. Quotations from the participants are presented to more fully present their perspective and views on their own experience.

Despite having lived in Australia for many years, the participants in this study were far more comfortable using Greek than English. This is a characteristic of the Greek community in Australia that has been widely observed; the migrant generation largely maintained a Greek-speaking identity. The first and second Australian generations are native speakers of English, however, and there is some evidence that facility in Greek is declining significantly among younger Australian-born individuals. Language is a significant factor in identity on multiple levels and is also significant in acculturation (see, for example Feuverveger 1989, Fishman 1977, Giles and Johnson 1981, Li 1995). In addition to its function in communication, language is an expression of ethnicity and cultural background (Authers 2006). For immigrants in particular, language may be a determinant in overall wellbeing, and the ability to communicate fully, including in the context of health care, may be crucial in the experience of health and illness (Unger and Schwartz 2012).

Despite the participants' preference for Greek, in fact, they were able to switch between Greek and English readily, and their normal use of Greek contained numerous English words which were specific to the Australian context. Some of these loan terms include: "homemade", "anyway", "alcohol", "jeans", "lungs", "hamburgers", "chips", "restaurant", "stress", "healthy", "computer", "children's hospital", "mobile", "bus stop", "drugs", "cheesecake", "ice-cream", "government", "happy", "yes", "cancer", "pollution", "inflection", "no hope", "soy milk", "very difficult", and "take it easy". When this language use was pointed out to them, a number of participants were quite surprised and also disappointed in themselves that they were using English words naturally and spontaneously and at times had

even forgotten the corresponding Greek words. This situation shows the importance of language maintenance to these members of the original migrant generation but also the inescapable presence of English in their environment as well as the existence of language shift (see Forrest and Dandy 2017). Overall, the English ability of these women was low, and they all relied on children and grandchildren for assistance communicating in the larger Australian environment. This was especially important in the context of health where their low level of formal education meant that they had little knowledge relevant to decision-making and tended to rely on traditional knowledge or on their English-speaking family members.

Health and Wellbeing in Greece before Migration

The participants in this study all seemed to feel that Greece before migration was a healthier place than Australia (generally the belief remains the same today particularly by the younger ones that the health benefits of life in Greece are endless "where to start – everything is just better in Greece, the food is yummy and good for you. People there (in Greece) are happier not just those at beach bars – but even at church"), and that being in their homeland was an aspect of wellbeing. Having migrated at a young age, however, it was notable that these perceptions did not reflect the adult perspective the women had gained over time or the experience of raising children. One commented on the fact that her memories of Greece were those of a child, saying, "We were strong kids then; the lifestyle was different then."

Medicine has a long tradition in Greece dating back to Hippocrates and has remained a highly respected profession. Nonetheless, some participants recalled doctors in Greece being not very knowledgeable. One noted, "There were doctors, but they did not know the medication." Others remembered only seeing a doctor for something serious, and others had never been to a doctor in Greece. One participants recalled, "In Greece in those years, I remember there was only one doctor for many villages and someone had to go personally to call the doctor, as there were no phones to contact the doctor to come and then the doctor would come on the donkey, it was very difficult."

The participants were aware that illness was treated differently in the Greece of their youth than in Australia. A more traditional and informal approach was the norm as was the use of home remedies and treatments derived from plants. Several of them recalled specific treatments they had experienced or instances of being sick. The participants' comments included: "My mother would rub me with petrol, she would give me warm drinks;" "I had whooping cough and I was taken to the seaside. The doctor had said 'take her for some fresh air." One participant, who had had tonsillitis, said, "They put something like hay on a towel, they would heat it and it would take away the infection, as they couldn't go to doctors." Another participant reported being made to stay in bed when she was sick and that rubs and cupping were also used at the time.

Overall, the participants felt they had been healthier in Greece, and their explanation for this was that they ate healthier food and looked after themselves better. One participant said, "When I was a child in Greece, I would eat meat only once a week, and it was fresh. We didn't have refrigerators. That's why there weren't so many illnesses." Another commented that, "We were lucky that there were no infections then as the atmosphere was clean."

The contrast between Greece and Australia was notable in the participants' perceptions of health. One factor in this may have been the difference in age. Speaking from a position of older age, the participants had greater awareness of illness that they had not yet experienced at the time they were still living in Greece. Since most of their experience of dealing with health problems of their own as well as those of family members had occurred in Australia, it is possible they viewed Australia as less healthy simply because it was the location of the majority of the illness they had personally experienced. It is also the case that these participants were aware of concerns about health and the environment that are periodically discussed in the media, including the Greek language media in Australia, and that this also influenced their perceptions as did their views of their children and grandchildren that reflect the wider Australian context.

Greece after Migration

Asked to think about the current situation in Greece, the participants felt that Greece itself as well as the people there had changed since they left. They had all had the opportunity to visit at various times and observe their original homeland firsthand. One participant explained her perceptions, saying: "Greece has changed. When I was there, I would close my eyes and remember the past, the Greece I remembered. Everything has changed, and this saddens me. The people who live there are now different, I did not find my friends, everything has changed." Another noted that: "Greece has changed, the way of life is very different, young people have no respect." One commented on the difference between Greece and Australia, saying, "Here we work, and I have taught my children this as well. There, the young people just want to have a good time. Here we have a better life." They all noted a significant difference between the Greek and Australian lifestyle and the fact that they had come to be seen as 'Australian' by people in Greece. Having left at an early age, these women had not experienced firsthand the changes in Europe in the final decades of the twentieth century which included major cultural and political change associated with European Union. At the same time, the participants were not conscious of the ways in which they had changed as a result of their experiences in Australian and, while they felt themselves to be the same as they had been when they left Greece, were unaware that their culture and that of people in Greece had diverged. Generally, they realized that they no longer belonged in Greece, and some of them were surprised to note that they, in fact, were disliked and feared as outsiders or interlopers. One participant explained: "[It was] terrible, my own father and brother did not speak to me. The people there changed. They would say 'the Australians have come to take our farmland'."

Another commented, "They disliked us and we them." One participant expressed a comparable concern showing her Australian association, saying, "They don't have money there. A lot of them are coming here for work, and this may result in our children here not having work."

The participants also commented on a number of lifestyle changes that they observed in Greece. These included statements such as, "They don't cook, they go out" and "They don't even go to church. The grandmothers don't even go. I go to church every Sunday." Changes in language use also stood out to the participants, particularly the use of the English language in Greece. One noted, "I hear on television shows from Greece that some Greek words are used wrong," adding that use of the English word "okay" is widespread. At the same time, the participants felt a strong sense of nostalgia and longing for the Greece they remembered. One said, "I do feel a pull to go back. I was born there, my village, but when I went everything was different, nothing was the same as the way I left it." One participant recalled that, on one of her first return trips to Greece, she wanted to bring some Greek soil to Australia but decided not to as the soil belonged to Greece. The pain and difficulty associated with what the participants referred to as having "two homelands" was illustrated by one woman who said that, when she went to Greece for a holiday she missed her family in Australia by the second week, but, when she leaves, she misses Greece. She commented, "That's what it's like to have two homelands." Another said, "It's our πατρίδα (homeland), my family is there. Here I feel and have always felt like someone who is free but a prisoner."

These participants expressed sentiments that show a significant aspect of the experience of migration, the difficulty in reconciling the effects of long term residence in a foreign location with the memories of their culture of origin. For many of them, the awareness that life in Greece had changed significantly from the form they remembered was an unexpected and often unwelcome realization, as was the fact that they, themselves, had gradually come to think differently from friends and family who had remained behind. This was evident in more easily observable as pects of their Greekness, such as the use of English loan words in speaking, as well as in more intangible ways, like attitudes about work, religious observance, and way of life.

Greek culture in Australia, which developed over the years through the efforts of the migrant generation as well as their descendants, reflects the memories of the original Greek settlers and has been adapted to the Australian context. This has created a situation where people of Greek background in Australia feel themselves to be Greek, and this cultural identity is defined by the standards of the migrant generation whose views and experiences reflect the Greece of their youth as well as their social and cultural background. By contrast, Greek people in Greece have developed a very different modern identity characterized by continuous progress from the difficult war years up to the present time, which is structured by membership in the EU and participation in the affairs of the European region. In this sense, the Australian Greek community has maintained a comparatively static conceptualization of what their cultural identity entails but has moved significantly into the English-speaking mainstream. This is, of course, an aspect of adaptation to

the Australian context and has occurred largely unconsciously among members of the Greek community.

Health and Wellbeing in Greece Compared to Australia

The participants in the study viewed health care as superior in Australia, but emotional health and wellbeing were seen as better in Greece. One participant noted, "The comfort that as difficult things maybe you can overcome them financially here [in Australia]. When my children were ill, I would take them to the doctor, buy the medication. There [in Greece] no. Our parents found it very difficult. There my siblings were ill, and they died, why they died? There wasn't medication, the doctors were not careful? The years were difficult." Another commented, "It's better here, the healthcare." Reflecting on the difference, a participant concluded, "Here people mainly go to doctors."

One participant, however, added that, while formal health care was better and health knowledge more widespread in Australia, people were healthier in Greece. Other participants agreed that the lifestyle in Greece was better, at least as they recalled it. One commented, "The way of life is very different in Australia compared to Greece. It's beautiful in Greece. You feel wonderful in Greece. Our life changed in Australia. You go to work, you come home and then you go to work again." Another expressed this same view: "Here we work very hard. I don't understand how over there they don't have the anxiety we do. Things are harder now, as they don't have work, but you go there and the shops and cafes are full."

The participants felt that, in Greece, people experience less stress than in Australia. One said, "They don't have money, but they have a good time." This participant then mentioned a childhood memory of Greece: "I remember, as a child, I would go to the garden. I would take an onion with some bread and I would eat. But I would not stress. I would go to the fields for work and I would come home singing in the evening." Another commented on the current economic crisis in Greece saying, "Things were better before the crisis. It was better, the way of life is better." Nonetheless, the participants had many favorable views about life in Australia that related to their health and wellbeing. One noted that, even when she is in Greece, she tries to maintain the lifestyle she has adopted in Australia, saying, "I try to keep my rules. I have breakfast, a sandwich for lunch or tuna with salad. We have learnt a different way here." Another participant commented that, "They live better in Greece, but the families are not close. We are more connected to our families here." Another recognized that she had adapted to the Australian context and that this had been beneficial. She said, "We have adopted an Australian lifestyle that I think works well."

The comments of the participants reflect the contrast they perceive between Greece and Australia but also demonstrate the degree to which they have become integrated into the Australian context. This fact was not apparent to many of them until they were asked to reflect on their experiences and talk about how they saw them. Overall, the participants recognized that they had done well in Australia and had achieved a lifestyle that surpassed what would likely have been available to

them if they stayed in Greece. Nonetheless, the perception of loss remains a significant aspect of their experience, and they are aware that there were tradeoffs in coming to Australia despite their own success and that of their children and grandchildren. This highlights the dilemma of migration that has been experienced by many groups, including the Greek community, namely that the gains they have achieved are necessarily balanced by losses, and it is not always possible to reconcile the two.

Life in Australia, Migration and Health

This section of the paper will begin with two quotes to set the scene for what will be discussed and can also serve as a reflection to what has been discussed – one quote is from an elder (who was born in Greece), and the second from a young person (a descendant born in diaspora).

> "Religious rituals are good, especially during illness as they help us emotionally. They do not take away illness. They give us courage and strength." – Elderly Greek participant

> "I believe it [magic] because it happened to me in my old house. One night, and after it happened I went straight to church. One night, we went to see a play in the city with cousins, a normal night, nothing weird. I went to bed hearing dogs barking and, as a teenager, you hear all the stories that if there is a dog barking, there is an evil spirit. I found this out from school and friends, not my grandmother, and also the internet. Because when you start reading things on the internet, forget it, you can't stop. I woke up and I used to have a clock next to my bed. It was digital, had a light and I could always see the time and I had a look and it was around 3 in the morning. You know how they say at 3 o'clock, all the spirits come out. I went to move and get back to bed. I could not do it. I could not do it. I could not move and then I looked in my doorway, and there was a massive black figure in my doorway. I went to go and scream. I couldn't scream. I couldn't move. I felt like something was sitting on top of me. I couldn't breathe and I remember I started crying. I freaked out. I didn't know what was going on. The first thing I did, because it's the only one I know off my heart, was to recite the Lord's prayer, because through Greek school, we always said it, and then I managed to fall asleep, and two hours later, it happened again, and it had moved from my door to have moved on top of me. I freaked out and I couldn't scream. I just wanted to scream and call for help. I couldn't move. I could not breathe and I was in panic mode. The next morning, I didn't know how to explain what happened. One of our family friends is a priest, and I went to my mum, 'You have to call him. I need to see him.' I went and spoke to the priest, and he said that we have to do something about this. When we spoke, he gave me a little prayer to read every night and he said that, if anything else continues, to come back. Two weeks passed, and then one night, out of nowhere, I woke up and I stood up in my bed, and all that I can remember is hearing all these voices and I can't even explain it. All these voices around my head, and I was, 'No, this is not okay, and this time, I could move, so I got up and I ran. I ran to my mum and I told her we have to go back [to see the priest]. The next day, we went back, and the priest took me to the front of the church and he did this massive prayer and he put me under, not a cloak (the gown the priest wears),

> and ever since then, it has not happened again. He said to me that it could have been either, not someone who was trying to hurt me, but something that was either wrong inside of me or something that wanted to get in my head and wanted to do me harm. I asked to see a priest because this is something a doctor could not understand, a possession from an evil spirit. They would think I'm losing it, but if you go to a church and say that, they would understand. I chose church because I always knew it can help because a lot of things had happened. My mum lost her sister to cancer when I was really little, and she would always tell me that she would go to church or get a priest for support and to help her prepare, and that's how I knew straight away that I have to." Greek – Australian young participant.

The participants in this study experienced a range of emotion associated with their experience of migration and settlement in Australia. While they had experienced happy times in Australia, memories of sadness, longing for family left behind, stress and anxiety related to the work context, the difficulty of not speaking English, and having to learn a new way of life are very clear to them. One participant spoke poignantly of the day they left Greece. Saying, "They took me to Athens, Piraeus, and, when the time came to leave. . . Oh God, if I knew how to swim and I was not afraid of death, I would have jumped. That's how much leaving impacted me, even though I was coming to my sister who adored me." Another explained, "We came here without knowing the language, without knowing anyone. It was challenging for us. The first year's there was a lot of sadness. We were afraid, and we would hide. I was afraid if someone knocked on the door, what would I say to them as I did not know the language. I was afraid if someone would come to my house and take my children. All this caused us stress." This participant concluded, however, that, "Australia made us people." This statement epitomizes an idea expressed by all the participants that the challenges they faced in Australia forced them to become self-reliant and resilient in the face of a strange society and culture. The participants were also aware of the connection between their experience of migration and their health, both mental and physical. One participant said, "The health of all immigrants has been impacted by migration." Another explained, "Migration impacted my health. I had a nervous breakdown. That's what the psychiatrist told me." Thinking about her experiences, other participants concluded that, "[Migration is] why I have health problems now." This same woman reflected on the importance of her faith in coping with the problems she experienced, saying, "Everything was very difficult. I was alone. It was very difficult and dangerous. I didn't know anyone, and I would pray, and I would ask for the Virgin Mary's help."

All of the participants in this study hoped and expected to return to Greece one day. This idea was an assumption that underlay their activities in Australia from their first arrival. In particular, it motivated their very strong desire to maintain their Greekness and, more importantly, to convey this identity to their children and grandchildren, even as they tried to adapt to the Australian context. One participant said definitively, "We all had the dream of staying in Australia for a few years only and to return to Greece." Another explained the dilemma of living between two cultures with the hope of returning to Greece as follows: "Everything changed from the minute we got here. Life changed. We did what the

Australians do. We kept the Greek language, [but] our manners changed. We have order here." Another participant described the hope of migrants like herself but noted the well-known difficulty of return migration, saying, "We all came here with the same dream, to make money and go back. This didn't happen, and the ones that did go back, returned to Australia." The problems faced by people of Greek origin who decide to return to Greece has been well-documented in the literature (see, for example, Christou 2002, 2006, King and Christou 2010) and serve to show the real impacts of the psychological and emotional changes caused by acculturation.

Conclusion

Despite the difficulties the [participants in this study, and other members of the original migrant generation of people of Greek origin to Australia, experienced, they have, as a group, shown remarkable resilience that is characterized by the integration of the first and second Australian generations into all levels of society. Nonetheless, the experience of migration affected the perceptions and attitudes of the migrants and changed them, relative to family and friends left behind in Greece. One domain of experience that has been significantly altered by their experience in Australia relates to health and wellbeing, where the contrast between the situation in the Greece of their childhood contrast sharply with the Australian context. While in certain ways, they tend to view their health and that of their family, as well as their access to healthcare services, as having benefited in Australia, they still have mixed feelings about the healthiness of the environment, especially the psychological dimension represented by life stress. This underscores the division between physical and mental health in the experience of migrants and suggests a need to better understand the psychological impacts of the experience of migration, especially as these individuals age and face additional physical challenges associated with chronic illness and the period of older adulthood. The perception of the Greece of their childhood that has been passed down to the next generations and that suggests a healthier, happier place presents a serious contrast with the Greece they have experienced as visitors later in life and serves, for many older migrants, as a source of concern and confusion that is difficult to reconcile with the advantages of their life in Australia. Overall, Greek migrants have achieved success in Australia, particularly as measured by economic status. This has contributed to physical health and vastly improved opportunities for children and grandchildren. It does not, in many cases, have the ability to soften the conflicting perceptions migrants often feel about their wellbeing that center on how Greece "should be" and confusion as to why it has, in their view, changed in ways they find concerning. This suggests a need to better understand the expectations of older migrants, the social factors that have motivated their actions over the life course, and the specific issues that exist within various of the cultural communities that make up Australia's multicultural society. Further research on these topics would greatly enhance our understanding of the experience of migration and also

suggest ways to more effectively address the needs of older Australians who were born in other countries and who are effectively caught between cultures.

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An Analysis of Pragmatic Stance in Drug Negotiation Discourse Concerning National Medical Insurance Catalogue in China

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As a kind of public discourse, negotiation discourse is different from daily discourse, usually involving politics, economics, diplomacy, medical treatment, etc., and it is closely related to the national stance. At present, the studies on negotiation discourse mainly focus on diplomatic and commercial negotiations, with few studies in the context of medical insurance negotiations. Thus, this paper takes the negotiation of the national medical insurance catalogue as the research data, applies the theoretical framework of the Pragmatic Stance Cone, and analyzes the stance construction from three dimensions —the conveyance of information, affection and attitude. The paper aims to deepen the relevant researches of pragmatic stance in negotiation discourse in China and is of important practical significance for its multi-perspective and multi-context research.

Keywords: *National Medical Insurance catalogue, negotiation discourse, pragmatic stance*

Introduction

Negotiation is a communication activity between two or more parties and arises only when the needs of the parties involved are likely to be met through the actions of the other. It is a process of coordinated behavior driven by certain interests and is the antithetical unity of cooperation and conflict. As a special kind of community discourse, negotiation discourse can construct the stances of all parties involved and achieve the purpose of negotiation in the process of interaction (Larry 2015).

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Medical insurance is a social insurance system which reduces the burden of medical expenses and prevents the sick from becoming poor due to illness. The medical insurance catalogue is the standard by which basic medical insurance pays for drugs, that is, the cost of drugs in the medical insurance catalogue will be reimbursed by the government according to regulations. Therefore, the negotiation of drugs in the national medical catalogue is a good thing to meet people's drug needs and benefit people to the greatest extent, reflecting the people-oriented belief and determination of China. For the first time, the 2021 medical catalogue drug negotiation focuses on high-priced rare disease drugs, concerning a small number of rare disease patient groups, thus it is of great significance to analyze the negotiation discourse.

At present, most of the domestic research on this national drug negotiation is from the medical and social perspectives, and the research content is mainly based on the negotiation mechanism, public opinion trend and social significance. For example, Zhang Bo et al. have explained the necessity of the negotiation mechanism and proposed the corresponding implementation plan in Research on the policy motivation and implementation model of "dual channel management mechanism for national reimbursement negotiation drugs"; Moreover, the research on negotiation discourse mainly focuses on the commercial, diplomatic and political fields. In *A Review of Business Negotiation Discourse Study Abroad* written by Xie Qun and Zhan Yue, the research progress of business negotiation discourse is summarized and analyzed. Due to its particularity, the negotiation discourse is closely related to the construction of the stances of the two parties involved in the negotiation, which has important practical significance for its multi-perspective and multi-context research. Therefore, from the perspective of pragmatics, this paper adopts the theoretical framework of Pragmatic Stance Cone, and attempts to analyze the pragmatic stance constructed by the negotiators through linguistic characteristics and sub-linguistic features in the negotiation process of the medical insurance catalogue. This paper takes the negotiation discourse as the research data, and analyzes the stance construction from three dimensions-the conveyance of information, affection and attitude.

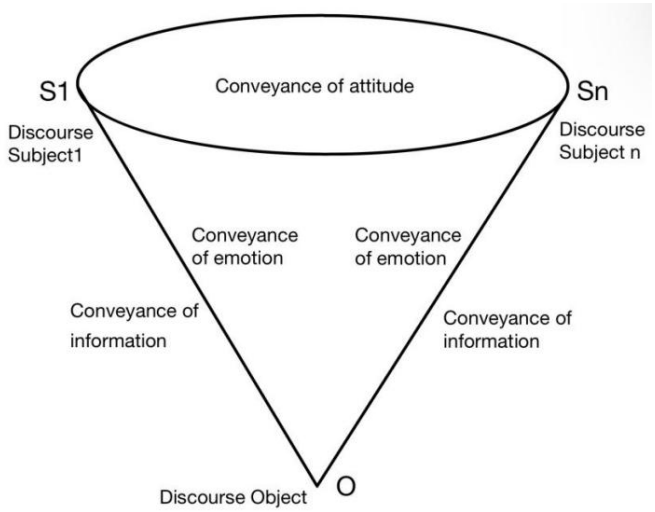
Pragmatic Stance Cone

The most important thing we do when we use language is to express our stances (Du Bois 2007). Stance taking is a public act issued in the form of dialogue, positioning the subjects and evaluating the object (Kostiantyn et al. 2016). Based on this view, Du Bois has proposed the theory of Stance Triangle, that is, the expression of stance contains three elements: stance subject 1, stance subject 2, and stance object. The two stance subjects are the two interacting parties, and the

stance object is the event and topic discussed by the two parties involved in the interaction. These three elements construct positions through evaluating, positioning, and aligning. At present, there are rich achievements in the research on stance, especially in the microscopic study of the role of specific linguistic forms and positions (Luo 2014), such as Miao Qing's negative evaluation stance research in *Negative Evaluation Stance taking from an Interactive Pragmatic Perspective* using *Ni Kan N*i in Mandarin as a clue from an interactive-pragmatic perspective, which proposes the constructive and deconstructive process of interpersonal relationships (Miao 2020).

Pragmatic stance is the study of stances under the discipline of pragmatics, and different contexts will construct different stances. In Pragmatic Stance Cone (Yuan 2019), 'S' represents the discourse subject, that is, the stance builder in discourse interaction, and discourse communication generally contains two or more discourse subjects, such as two or more negotiators in the negotiation; O represents the discourse object, that is, the object of the discourse constructed by the discourse subject. As the three dimensions of Pragmatic Stance Cone, the conveyance of information, emotion and attitude influence each other, constructing the stance of discourse subject in the process of dynamic contexts.

Figure 1. *Pragmatic Stance Cone (Yuan 2019)*



As shown in Figure 1, the conveyance of information refers to 'conveying some kind of information to the other party', which is the act of expressing the intention of the discourse in a specific context by describing and evaluating. The conveyance of information, on the outside of OS_1 and OSn generatrices, indicates that it is the first shown behavior in discourse interaction, which belongs to the explicit dimension; the conveyance of emotion refers to 'a certain kind of emotion caused by the surroundings or the content of the other person's speech', and this

emotion is expressed through the language mode or the non-verbal mode as the emotional stance (Englebreston 2007). Emotional stances are generally divided into positive emotional expression and negative emotional expression (Gong 2014), which can be achieved through different strategies such as emotional words, verbal behaviors, gestures, facial expressions, voice intonation, etc. The conveyance of emotion is located on the inside of the two generatrices of OS_1 and OSn, indicating that it is the behavior that appears after the conveyance of information achieved by the discourse subjects, and is often contained in the conveyance of information. The conveyance of attitude refers to the 'attitude to the content of the discourse'. It locates in the bottom position of Pragmatic Stance Cone, that is, the thought, feeling and attitude of the discourse subjects to the objects are constructed through the conveyance of information and emotion.

The distribution of the three dimensions of the conveyance of information, emotion and attitude of the Pragmatic Stance Cone fully expresses the contextualization and dynamic characteristics of stance construction (Yuan 2019). In different contexts, the stances expressed by the discourse subjects and the pragmatic strategies they choose are also different. According to the above definitions, it can be seen that the representative of the national side and the representative of the enterprise side are discourse subject 1 and discourse subject 2 respectively, the price of the medical insurance catalog drug is the discourse object. This paper selects the medical insurance catalog negotiation as the corpus, and analyzes the pragmatic stances in the negotiation context, based on the framework of Pragmatic Stance Cone from the three dimensions of the conveyance of information, emotion and attitude.

Corpus and Research Questions

In November 2021, the national drug reimbursement list negotiation, a national on-site negotiation held by the National Health-care Security Administration, attracted much attention. The previous "2021 National Drug Reimbursement List Adjustment Work Plan" announced the list of drugs having passed the preliminary form review, and a total of 74 drugs were newly added to the list, of which 7 were rare disease drugs. Spinal muscular atrophy (SMA) is a rare disease and ranks the first lethal genetic disease among children under 2 years old. The drug Nusinersen Sodium Injection to treat this rare disease is also among this year's National Drug Reimbursement List. Nusinersen Sodium Injection is the world's first precisely-targeted therapy SMA drug developed by Biogen Idec Ltd., which was approved in the United States in December 2016 and launched in China in April 2019. In the United States, Nusinersen Sodium Injection is a dose of $125,000 (about 870,000 yuan), which belongs to the high-priced drug. Officials said that Nusinersen

Sodium Injection is the first time to participate in health insurance negotiations and is the first high-value rare disease drug to be included in the National Drug Reimbursement List.

On November 11, 2021, the national side and the enterprise side conducted eight rounds of one-and-a-half-hour negotiations on the quotation of Nusinersen Sodium Injection into the medical insurance catalogue. The negotiator of the National Health-care Security Administration is Ms. Zhang Jinni, director of the Pharmaceutical and Equipment Procurement Supervision Department of the Fujian Provincial Medical Insurance Bureau, and the negotiator of the enterprise side is the relevant personnel of Biogen Idec Ltd. The negotiation was reported on CCTV13 news channel. This paper transcribes the discourse in the negotiation with a total of 1064 Chinese characters and attempts to explore two questions through the analysis of corpus: first, what stances have been expressed by the national side and the enterprise side in the national medical insurance catalogue negotiation and why; second, how the two sides of the negotiation can construct their respective stances through verbal expression and non-verbal expression.

Results and Discussion

Conveyance of Information

The conveyance of information is to indicate the intention, and in the context of the negotiation, it aims to express the stance and purpose of the negotiation of the discourse subjects. In the context of face-to-face negotiations between the two sides, both language mode and non-verbal mode play an informational role. Language mode is discourse, and through speech interaction it can convey certain information to each other or evaluate the discourse object. This interaction is the expression process between the discourse subjects and between the subject and the object. The non-verbal mode includes a series of modes such as gestures, distance, eyes, speech, etc. With the combination of hearing and vision, the conveyance of information can achieve more comprehensive and accurate effects.

On the one hand, from the perspective of the national side, Ms. Zhang Jinni, as the negotiator of the National Health-care Security Administration, first grasped the floor to speak in the negotiation, expressing the purpose of the negotiation. For example (said by Ms. Zhang Jinni):

> Example 1: "... The goals are the same, and neither of us wants routines. We ask the enterprise negotiator to quote the first round ... We hope that the enterprise will show the greatest sincerity in the first round of quotations".

Example 2: "From the perspective of our negotiation team, we are guiding the enterprise to quote this reserve price before we can negotiate".

Example 3: "I believe that there is no market in the world that is more determined than the Chinese government to negotiate this price on a global scale, and I think you should be able to understand it".

First of all, Ms. Zhang Jinni put forward the negotiation premise of "same goal", that is, to remind the enterprise side that the purpose of this negotiation is to promote the entry of Nusinersen Sodium Injection into the National Medical Insurance Catalogue in China and achieve win-win cooperation between the two sides. Secondly, the words "hope" and "guide" further indicate the leading voice of the national side: in the negotiation, enterprises should try their best to meet the reserve price of drugs proposed by the national side through their discourse interaction. In addition, Ms. Zhang Jinni proposed that the China's determination to include high-priced rare disease drugs in the national drug reimbursement list be strong. The stance of the national side she represented was intuitively and clearly expressed, that is, to strive to promote the success of this negotiation.

On the other hand, from the perspective of the enterprise side, the analysis of the non-verbal modality can concretely reflect its informational stance. It is mainly reflected in two aspects: behavioral activities and facial expressions.

Figure 2. *The Eighth Consultation of the Enterprise Side*

As shown in Figure 2, in the one-and-a-half-hour negotiation, the enterprise side left the table to discuss and ask for instructions eight times, reflecting the attitude and stance of the enterprise side. That is, it is necessary to consider the

enterprise's own profits and survival issues, and also the need to enter the vast Chinese demand market. The enterprise side tries to find the best balance between these two goals, and smoothly enters the National Medical Insurance Catalogue in China without harming the interests of the enterprise.

Figure 3. *Facial Expression of the Enterprise Side*

In Figure 3 it can be seen that the representative of the enterprise side holds a tight brow, looks directly at Ms. Zhang Jinni, and their lips are also tightly pressed together, reflecting a serious psychological state, which means that the enterprise side feels the difficulty of this negotiation, and it is expected that greater price adjustments will be needed. Although there is no discourse expression, this facial expression vividly and concretely constructs the psychological activities and views of the enterprise side.

At the same time, although the number of words spoken by the enterprise side in the negotiation is much less than that of the national side, it can also be seen that it has a firm negotiating stance from the brief words in the following example (said by the enterprise side).

Example 4: "Our offer is 37800, which is a very big effort".

Here the enterprise negotiators have reduced the price to 37,800 yuan per bottle from 53,680 yuan per bottle authorized by the headquarters initially. They have made "a very big effort", as they say. This sentence belongs to the positive evaluation of self-behavior. Here, the enterprise negotiators hope to be affirmed by the national side through self-positive evaluation and demonstration of their

efforts, so as to promote further negotiations, thus implicitly expressing the evaluation of the object by the discourse subjects.

Conveyance of Emotion

The expression of emotions is often not done through a single discourse, but is constructed through multiple rounds of discourse interactions during the interactive process (Spencer-Oatey 2011). There are some emotional stance strategies which can be used to convey emotion, such as direct expression of emotional stances, implied indexing of emotional stances and the description of emotion through verbal behaviors and non-verbal behaviors (Marín-Arrese 2021). In the negotiations between the two sides, the national side and the enterprise side have realized the expression of emotions and the construction of stances through many verbal interactions. Expressions are generally divided into positive emotions and negative emotions, which can be analyzed from two aspects: emotional words and expressive speech behaviors.

Table 1. *Examples of the Conveyance of Emotion in the National Medical Insurance Catalogue Negotiation*

Discourse Object	**Examples (said by Ms. Zhang Jinni)**	**Emotion**
The fourth quotation of the enterprise side	"The price of 42800, from the enterprise side, I believe you feel painful..."	Empathy
The sixth quotation of the enterprise side	"For this price, I think the prior effort... I'm *really* sad."	Disappointment
The fifth quotation of the enterprise side	"...It was *really* tough, in fact, just now I felt that my tears were about to fall."	Difficulty
Expected outcome of the negotiations	"If this medicine can be negotiated, we may *really* be happier than you."	Expectation

As shown in Table 1, Ms. Zhang Jinni's responses to the several quotation results of the enterprise side have shown her negative emotions, which can be seen from emotional words such as "sad", "difficult" and "tears falling"; similarly, from the perspective of expressive speech behaviors, in the above four examples, the word "really" is used in three, which assumes the adverbial role of indicating degree, deepening the expressive function of the statement sentence, and expressing the emphasis and importance of the conveyance of emotion. In the fourth quotation, Ms. Zhang Jinni conveys empathy towards the enterprise side, and considers the difficulties from the perspective of the enterprise side, showing universal human concern. In the fifth and sixth quotation, Ms. Zhang Jinni conveys the emotion of disappointment and difficulty towards the enterprise side. Negotiation is an activity that both parties need to choose between their personal interests. Ms. Zhang Jinni's conveyance of emotion here can make the enterprise

side realize that China can understand its situation, and hope to include this Nusinersen Sodium Injection into the National Medical Insurance Catalogue in China. This is a good thing for the benefit of the Chinese people, because it can raise the sense of happiness of Chinese people and promote the development of the society.

As one of the parties involved in this drug negotiation concerning National Medical Insurance Catalogue in China, the enterprise side also engaged in expressing emotional behaviors in the negotiation through verbal expressions. For example (said by the enterprise side):

> Example 5: "So are we, we are also about to shed tears. Please give us some hints".
> Example 6: "After our consultation, we take a good auspicious number..."

In Example 5, the enterprise side received Ms. Zhang Jinni's negative emotional information about the quotation, and replied with the same negative emotion, that is, "We are also about to shed tears". This emotional expression can reflect the same negotiation stance of the enterprise side and the nation side: hoping that the negotiation will have a good result, so the emotions of both sides are convergent. Example 6 indicates that the negotiation has entered the final stage, and the representative of the enterprise side has given the final quotation after learning the reserve price of the drug set by the national negotiation team, so that the Nusinersen Sodium Injection has successfully entered the national medical insurance catalogue. Here, the enterprise negotiator used the word "auspicious" to express his positive emotion for the perfect result of the negotiation, and also expressed his support and affirmation of the national stance of "Life first; people first" concept.

The above pragmatic analysis show that the conceptual content, the interpersonal and inter-group relationship and stance expressed by negotiation discourse are closely related and they interact with one another in a dynamic and complex way through verbal behaviors. The conveyance of emotion is a very effective way for both the parties involved in this negotiation to have empathy and emotional understanding towards each other. This kind of emotional understanding can achieve better results compared with single conveyance of information.

Conveyance of Attitude

Attitude is the stable psychological tendency of the individual towards a specific object, which contains the subjective evaluation of the discourse subject and the resulting behavioral tendency (Wu 2016). The act of conveyance of attitude refers to "the purpose of the conveyance of attitude is to sincerely express a certain state of mind in response to the event or state expressed in the content of the

proposition" (Searle 1979, p15). According to the Pragmatic Stance Cone, through the mutual integration of expressions, the discourse subjects can express their attitude and stance.

The conveyance of attitude is a choice of convergence or extension between discourse subjects (Yuan 2019). In the context of the negotiation of drugs in the national medical insurance catalogue in China, the starting point of both sides is the same, which belongs to the stance of convergence. On the one hand, through the comprehensive consideration of the current stage of China's economic and social development level, as well as the affordability of the insured personnel and the affordability of the fund and other factors, the national side determined the payment standard formed by the negotiation, hoping to reduce the price of Nusinersen Sodium Injection to a range that most patients can afford through negotiation, so the national side hopes that the negotiation can be successful, so that rare disease drugs can enter the national drug reimbursement list and benefit people to the greatest extent. On the other hand, enterprise side also hopes that its own production of drugs can enter the national medical insurance catalogue, because China's population base is the world's largest medical insurance market, entering the medical insurance catalogue means that the enterprise opened a broad potential demand market, the enterprise's sales will be doubled, and profits will also increase, so the enterprise side also hopes to promote the success of this negotiation. It follows from this point that the national side and the enterprise side have a convergent pragmatic stance, which is reflected in the language and non-verbal modalities in the negotiation. For example (said by Ms. Zhang Jinni):

> Example 7: "Just now, in fact, from our point of view, we really repeatedly stated our stance, I think that at the negotiating table we as party A are so humble, really..."
> Example 8: "The space for adjustment by our negotiating team for the reserve price is zero, and we follow this reserve price. If you step in, we meet; if you can't step in, we are parallel lines".

In the process of the conveyance of attitude, the national side, as the leader in the negotiation, clearly expressed its attitude through words such as "repeatedly stated", "the space for adjustment is zero", "parallel line" and so on. That is, the reserve price of drugs determined by the National Medical Insurance Bureau is a rigid line and will never be changed for the benefit of the enterprise, so if the enterprise wants to achieve the success of the negotiation, it must adjust its own price and seek to fit the national drug reserve price within the affordable range of the enterprise to enter the negotiation space. The attitude expressed by Ms. Zhang Jinni here is not a personal subjective attitude, but a view and attitude that stands on the national stance and takes the state as the main body. The attitude of the state towards the entry of Nusinersen Sodium Injection into the National Medical

Insurance Catalogue in China is very rigid, because it is related to the living standards and happiness index of thousands of families. Careful and comprehensive consideration and arrangement on this issue are necessary and vital. For example (said by Ms. Zhang Jinni):

> Example 9: "Medicare is actually a problem that we have been thinking about, that is, every small group should not be abandoned".
> Example 10: "The cost of vaccines actually accounts for a large expenditure of the medical insurance fund, so we, the National Medical Insurance Bureau, still have the courage to carry out our health insurance negotiations this year, and indeed we have experienced this very great determination of 'Life first; people first' concept".

Here Ms. Zhang Jinni first started from her identity as a medical insurance personnel working in the local frontline, described the economic pressure and life embarrassment of rare disease patients who have difficulties seeing a doctor and treating diseases, and also proposed that in the post-epidemic era, China has taken a series of measures in order to fight the epidemic, such as lowering the medical insurance fund, taking the cost of vaccines, etc., and then put forward the expected risks and promotion difficulties of the national introduction of high-priced rare disease drugs. It reflects the courage and determination of the national side in this negotiation, showing the principle and policy of China to put the people's health first and does not abandon any small group, and further indicates the national side's stance of guiding the interests of Chinese people. As a policy closely related to Chinese people, the National Medical Insurance Catalogue in China can greatly affect the Chinese people's living standards and solve the livelihood problems of difficult and expensive medical treatment.

Figure 4. *Ms. Zhang Jinni's Facial Expression and Gesture*

At the end of the negotiation, when the enterprise side gave a drug quotation that met the requirements of the national reserve price, the two sides reached a deal. At this moment Ms. Zhang Jinni was smiling and clapping, as can be seen from Figure 4. Her facial expression and gesture here express a positive attitude. Reaching an agreement in the negotiation is in line with the expectations of China, which can facilitate the perfection of the national medical insurance catalogue, improve the living quality of the patient groups, and further promote medical care and social development in China.

Conclusion

Based on the framework of Pragmatic Stance Cone, this paper analyzes the pragmatic stance constructed in the drug negotiation of national medical insurance catalogue in China from the three dimensions of the conveyance of information, emotion and attitude, and achieves the following research results. In this negotiation, the national negotiator always guides the negotiation process, expresses the informational stance of hoping to promote the success of the negotiation through verbal and non-verbal behaviors, the negative emotional stance of guiding the enterprise quotation through emotional expressions and the attitude stance of "Life first; people first" concept through language modes and non-verbal modes. Meanwhile, the negotiator of the enterprise side utters the expressive stance of hoping that Nusinersen Sodium Injection would be included in the national medical insurance catalogue through verbal and non-verbal cues, the negative and positive emotional stance of seeking a balance between corporate interests and the national reserve price by using language modes and non-verbal modes, and the attitude of adjusting prices and entering the Chinese market guided by the national stance through both verbal and non-verbal behaviors.

From the above pragmatic analysis based on the theoretical framework of the Pragmatic Stance Cone, it can be seen that the conveyance of information, the conveyance of emotion and the conveyance of attitude are complementary to each other among the discourse subject 1, discourse subject 2 and discourse object, and are expressed through verbal behaviors such as direct expression and expressive speech behaviors and non-verbal behaviors such as facial expressions and gestures.

In this paper, the selection of corpora is limited, and the corpus analysis is mainly based on a negotiation of Nusinersen Sodium Injection entering into the National Medical Insurance Catalogue in China between the national side and the enterprise side, which has certain limitations. In the future research, we may select a larger number of and a wider range of drug negotiations as corpora, analyze pragmatic stance expressions from different angles, and further deepen the stance

research in the area of pragmatics, aiming to conduct further multi-perspective and multi-context research concerning different social issues in discourse analysis.

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Dose Response Effects of Liraglutide (Saxenda) on Weight Loss among Overweight and Obese Individuals: A Three Arm Randomized Controlled Trial

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Introduction: *The present is aimed to determine the effects of three different doses of Liraglutide (Saxenda) that are 0.6mg, 1.2mg and 1.8mg with and without exercises on obese population after 6 months of intervention.* ***Methodology:*** *A three arm randomized controlled trial was performed at Isra Univeristy Hospital, Hyderabad. A total of n=60 obese participants including both male and female were recruited and divided into two groups n=20 participants in each group. Each group was than further divided into two subgroups n=10 participants in each subgroup.* ***Results:*** *The analyses of the findings had revealed that n=22 participants included in the study were male whereas n=38 were female. The mean Body Mass Index (BMI) of the participants in group A at baseline was 29.95±1.35kg/m^2, 30.21±1.56 kg/m^2 and 29.54±2.33 kg/m^2 in subgroup (i), (ii) and (iii) respectively whereas in group B the values of BMI at baseline were 30.25±1.56 kg/m^2, 29.87±2.56 kg/m^2 and 30.11±2.33 kg/m^2 in subgroup (i), (ii) and (iii) respectively. In group C the values were 30.01±2.14 kg/m^2, 28.59±2.22 kg/m^2 and 30.58±1.98 kg/m^2 in subgroup (i), (ii) and (iii) respectively.* ***Conclusion:*** *The findings revealed substantial differences in BMI and body fat percentage within each group from baseline through three and six months of intervention. Higher Liraglutide (Saxenda) dosages (1.8mg) resulted with greater decreases in BMI and body fat percentage than lower doses (0.6mg and 1.2mg).*

Keywords: *obesity, body mass index, body fat percentage*

Introduction

Overweight and obesity have become major global public health concerns that impact people of all ages (Adeloye et al. 2021). According to the World Health Organization (WHO), the prevalence of these illnesses has risen considerably during the last four decades. Obesity is distinguished by abnormal or excessive fat deposition in the body (Soeroto et al. 2020, Tchang et al. 2021). Individuals with a body mass index (BMI) between 25 and 30 are categorized as overweight, while those with a BMI greater than 30 are classified as obese (Ali et al. 2022). Obesity is the result of a complex interaction of genetic, metabolic, socioeconomic, environmental, and behavioral variables. Understanding and managing these characteristics are critical to addressing the global burden of overweight and

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obesity. The disease is distinguished by abnormal or excessive fat deposition in the body (Okunogbe et al. 2021, Semlitsch et al. 2019)[5]. Recognizing the negative impact of obesity on world health, the World Health Organization (WHO) developed the 2013-2020 world Action Plan to prevent and manage non-communicable diseases (NCDs) (Felisbino-Mendes et al. 2020). One of the key goals of this action plan is to reverse the rise in obesity rates by 2025. This aim highlights the critical need to treat obesity's underlying causes and risk factors. By focusing on prevention, education, and intervention, efforts can be directed towards the WHO's ambitious objective of stunning the growth in obesity by 2025, thereby fostering improved global health outcomes for future generations (Chooi et al. 2019). Obesity has a significant economic impact in addition to its health consequences. It has an impact on families, healthcare systems, and the global economy as a whole. Obesity-related direct medical costs include expenses for obesity-related disease prevention, diagnosis, and treatment (Luhar et al. 2020, Lin et al. 2020). Obesity is addressed in around 2-8% of European countries' healthcare budgets, equating to around 0.6% of their gross national income (GNI) per capita. To put that in context, figures from the United States in 2008 indicated that overweight and obesity alone accounted for a whopping $147 billion in total medical costs. However, these estimates just show the direct costs of obesity; the indirect costs are likely to be substantially higher. Obesity's indirect expenses include a wide range of causes (Normand and Gibson 2020). They include lost money and economic productivity as a result of limited career choices and lower physical capabilities as a result of obesity. Furthermore, there are increased healthcare costs associated with treating obesity-related disorders, as well as the possibility of premature death. Asia has seen a considerable and accelerated rise in mean BMI, as well as a rapid transition from underweight to overweight. Notably, Asians are more prone to central fat deposition, with fat accumulating largely in the abdomen region (Williams and Periasamy 2020, van Eyk 2019). In comparison to other populations, this pattern of fat distribution is more apparent. Individuals in Asia with lower BMIs but central fat deposition have suffered an upsurge in metabolic disorders such as nonalcoholic fatty liver disease, diabetes, and cardiovascular disease, which is concerning (Bays et al. 2022). A weight loss of 5% has been found to provide considerable benefits in terms of lowering morbidity and mortality risks as well as enhancing health-related quality of life. The most well-known way to lose weight is through lifestyle changes such as dietary changes and increased physical activity (Amanat et al. 2020, Carbone et al. 2019). However, behavioral therapies' long-term efficacy in maintaining weight loss is sometimes restricted, with gradual weight regain being a regular difficulty. Pharmacological treatments can be utilized in addition to lifestyle adjustments, especially when lifestyle changes alone are insufficient. Unfortunately, there are few anti-obesity drugs available, particularly for long-term use (Jakab et al. 2021, Cornier 2022). As a result, developing effective and long-lasting pharmaceutical therapies remains an important topic of study. Healthcare professionals can provide more options to those battling with weight control by broadening the range of anti-obesity drugs available, potentially leading to better long-term outcomes (Ruban et al. 2019). Liraglutide, a glucagon-like peptide-1 (GLP-1)

analogue, has been found to be effective in lowering body weight by suppressing hunger and calorie intake. Randomized controlled trials have shown that liraglutide, at doses up to 3.0 mg per day, causes significant and clinically relevant weight loss when compared to a placebo (Khalil et al. 2020). Furthermore, these weight-loss gains have been sustained for up to two years. Liraglutide has been approved for treatment in overweight and obese individuals for up to three years in numerous countries, including the United States and the European Union. Real-world data from Canada have further validated the efficacy of liraglutide when paired with diet and exercise, with over 60% of participants losing more than 5% of their body weight (Cornier 2022). Yet further studies are needed to determine the dose response effects of liraglutide in weight loss particularly in Asiatic population. It is therefore the present is aimed to determine the effectiveness of three different doses of Liraglutide (Saxenda**)** that are 0.6mg, 1.2mg and 1.8mg with and without exercises and diet control on obese population after 6 months of intervention.

Methodology

A three arm randomized controlled trial was performed at Isra Univeristy Hospital, Hyderabad. A total of n=60 obese participants including both male and female were recruited and divided into two groups n=20 participants in each group. Each group was than further divided into two subgroups n=10 participants in each subgroup. Randomization was performed on the bases of envelope method. The intervention strategies included the following protocol.

Group A Liraglutide (Saxenda 0.6mg)

Subgroup (i) participants were given Liraglutide (saxenda) at a dose of 0.6mg per day for six months.
Subgroup (ii) Liraglutide (saxenda) 0.6mg per day for six months with daily exercises.

Group B Liraglutide (Saxenda 1.2mg)

Subgroup (i) participants were given Liraglutide (saxenda) at a dose of 1.2mg per day for six months.
Subgroup (ii) Liraglutide (saxenda) 1.2mg per day for six months with daily exercises.
For first week saxenda 0.6mg per day was given than from second week onwards 1.2mg per day was administered.

Group C Liraglutide (Saxenda 1.8mg)

Subgroup (i) participants were given Liraglutide (saxenda) at a dose of 1.8mg.
Subgroup (ii) Liraglutide (saxenda) 1.8mg per day for six months with daily exercises.

For first week saxenda 0.6mg per day was given than for second week 1.2mg per day was administered and from third week onwards 1.8mg per day for rest of the treatment session was given.

Liraglutide (saxenda) was injected subcutaneously at a given dose once daily for a total of six months in all three groups as per mentioned dosages.

Participants of subgroups (ii) in all groups were recommended 30 minutes of simple walking exercises in the day time.

Outcome Measures

The data was taken thrice at baseline, after completion of three months of protocol and at end of six months on a given parameters.

Body Mass Index

The body Mass index of the participants in all the groups were calculated at three different intervals at baseline after three months and at the end of six months of protocol. The values were measured using a following formula (Misra and Dhurandhar 2019):

BMI=Weight in Kilogram/Height in meter square

Body Fat Percentages

Body fat composition was calculated using skin fold thickness method. The test has a inter class correlation coefficient (ICC) of 0.99. The reference range of body fat according to age and gender was taken from American College of Sports Medicine (ACSM) Health-Related Physical Fitness Manual (Mohajan and Mohajan 2023).

Data Analyses

The analyses of data was performed using a SPSS version 24. For descriptive analyses frequency and percentage charts were plotted. Whereas inferential statistics was performed after identifying the normality assumptions of data. For within the group analyses continuous measure Annova was performed whereas for between the group analyses one way analyses of variance was determined. Level of significance were determined at 95% of Confidence Interval $p<0.05$.

Ethical Consideration

The study was completely according to the guidelines of Belmont report of human subject (Anabo et al. 2019). Confidentiality, autonomy and beneficence of participants included in the study were maintained. The purpose and the objectives of the study was precisely explained prior to induction of participants. Consent was taken in English and in Urdu both.

Results

The analyses of the findings had revealed that n=22 (36.66%) participants included in the study were male whereas n=38(63.33%) were female. The mean Body Mass Index (BMI) of the participants in group A at baseline was 29.95± 1.35kg/m^2 and 30.21±1.56 kg/m^2 kg/m^2 in subgroup (i), and (ii) respectively whereas in group B the values of BMI at baseline were 30.25±1.56 kg/m^2, and 29.87±2.56 kg/m^2 in subgroup (i) and (ii) respectively. In group C the values were 30.01±2.14 kg/m^2 and 28.59±2.22 kg/m^2 in subgroup (i) and (ii) respectively. Further analyses of the variables at baseline were illustrated in Table 1.

Table 1. *Analyses of Variables at Baseline and Between Group Analyses*

Variables	Subgroup	Number of Male Participants n (%)	Number of Female Participants n (%)	Average BMI ±SD in kg/m^2	p-value	Average Body Fat percentage (BF%) ±SD	p-value
Group A	I	4(40)*	6(60)*	29.95±1.35		29.5±2.06	
	II	3(30)*	7(70)*	30.21±1.56	>0.05	30.26±1.25	>0.05
Group B	I	3(30)*	7(70)*	30.25±1.56		29.63±2.01	
	II	4(40)*	6(60)*	29.87±2.56	>0.05	31.22±1.33	>0.05
Group C	I	3(30)*	7(70)*	30.01±2.14		29.56±1.58	
	II	5(50)*	5(50)*	28.59±2.22	>0.05	30.22±2.03	>0.05
* Indicates percentages of male and female participants in subgroup out of n=10							

Further analyses of variance test was applied to determine the differences in within the group from baseline to after three months and six months of intervention. The findings had revealed that within the group analyses had shown significant difference in mean of BMI and BF% from baseline to after three months and after six months of intervention. The analyses were illustrated in Table 2.

Table 2. *Analyses of Variance to Determine Within the Group Change in BMI and BF%*

Body Mass Index					
Variables	**Subgroup**	**Baseline Mean ± Sd**	**Month 3 Mean ± Sd**	**Month 6 Mean ± Sd**	**Level of significance p-value**
Group A	I	29.95±1.35	28.91±1.26	26.12±1.35	
	II	30.21±1.56	28.54±1.33	25.93±2.2	$p<0.05^a$
Group B	I	30.25±1.56	28.63±1.8	25.17±2.05	
	II	29.87±2.56	27.48±2.1	25.11±2.3	$p<0.05^a$
Group C	I	30.01±2.14	26.9±2.2	22.52±2.3	
	II	28.59±2.22	25.32±2.1	21.92±2.32	$p<0.05^a$
Body Fat Percentage (BF %)					
Group A	I	29.5±2.06	28.56±2.56	27.21±1.9	
	II	30.26±1.25	28.21±1.98	26.9±1.5	$p<0.05^a$
Group B	I	29.63±2.01	29.12±2.6	26.1±2.5	
	II	31.22±1.33	29.01±2.1	25.95±1.65	$p<0.05^a$
Group C	I	29.56±1.58	29.2±1.69	26.01±3.1	
	II	30.22±2.03	28.9±1.5	25.53±2.9	$p<0.05^a$
[a] indicates significant difference in mean within the group					

Further one way analyses of variance was applied to determine within the group difference as observed by administering different doses of Liraglutide (saxenda) on body mass index and body fat percentage of participants and the analyses of the findings had revealed that significant reduction $p<0.05$ in both BMI and BF% of participants had been found in group receiving higher dosages of Liraglutide (saxenda) that was 1.8mg per day followed by 1.2mg and 0.6mg. Hence suggesting that higher dosages of Liraglutide (saxenda) produced better results than small doses (Table 3).

Table 3. *One Way Analyses of Variance to Determine between the Group Comparisons*

Body Mass Index (BMI)				
Variables	**Subgroup**	**Average value of BMI at week 6 ± Sd**	**df**	**Level of Significance p<0.05**
Group A	I	26.12±1.35	3	0.001
	II	25.93±2.2		
Group B	I	25.17±2.05	3	0.001
	II	25.11±2.3		
Group C	I	22.52±2.3	3	0.001
	II	21.92±2.32		
Body Fat Percentage (BF %)				
Group A	I	27.21±1.9	3	0.001
	II	26.9±1.5		
Group B	I	26.1±2.5	3	0.001
	II	25.95±1.65		
Group C	I	26.01±3.1	3	0.001
	II	25.53±2.9		

Discussion

The 60 participants were sorted into three groups (A, B, and C), which were then subdivided into two subgroups (i, and ii). The baseline analysis revealed that Group A had an average BMI ranging from 29.95 to 30.21 kg/m^2, Group B had an average BMI ranging from 29.87 to 30.25 kg/m^2, and Group C had an average BMI ranging from 28.59 to 30.58 kg/m^2. After three and six months of intervention, the analysis of variance revealed significant variations in BMI and body fat percentage (BF%) within each group. Furthermore, greater doses of Liraglutide (saxenda) (1.8mg per day) resulted in a substantial reduction in both BMI and BF% when compared to lower doses (1.2mg and 0.6mg). This data implies that greater Liraglutide (saxenda) dosages generated superior benefits in terms of weight loss and body fat reduction. Moreover it has also been observed that higher dosages of Liraglutide was associated with certain side effects such as administration of 1.2mg of drugs causes lightheadedness and dizziness whereas 1.8mg of drugs causes vomiting and headache. In comparison to that low dose of drugs had shown no such side effects. The findings of our study was in consistent with the findings of another study that was performed with the aimed to determine Liraglutide 3.0 mg impact in causing weight reduction and improving obesity-related comorbid disorders in obese people in Saudi Arabia. A retrospective cohort assessment was performed on 399 individuals taking Liraglutide 3.0 mg in conjunction with diet and exercise for 6 months. The group included a mean age of 46.4 years, a mean BMI of 40.4 kg/m^2, and a predominance of female patients

(74.4%), according to the baseline analysis. The average weight reduction was 6.5 kg, with 52.6% of individuals losing 5% of their total weight, 27.8% losing 10%, and 11.3% losing 15% of their body weight (Alshehri et al. 2023). Additionally, after 6 months of therapy, HbA1c levels were decreased by 0.5%. Liraglutide 3.0 mg had no effect on systolic blood pressure or alanine transferase levels. Overall, Liraglutide 3.0 mg caused clinically significant weight reduction and improved glycemic control, demonstrating its efficacy in a real-world situation (Alshehri et al. 2023). In another study the efficacy of liraglutide 3.0 mg in conjunction with diet and exercise was examined in this retrospective observational trial done in Switzerland. The study's goal was to evaluate weight reduction results and patient adherence to therapy. Data were gathered from an obesity treatment clinic's computerised medical records. The whole group included 277 individuals, with 19% having had bariatric surgery. Treatment persistence of at least 4 months (n = 236), 7 months (n = 159), or 12 months (n = 71) was used to conduct subgroup analyses (Haase et al. 2021). The median duration of liraglutide treatment was 6.8 months, with most patients receiving a maximum dosage of 1.5 mg. Weight reduction was shown to be considerable across all subgroups. The average 7-month weight decrease from baseline in the entire group was -4.1 kg (-4.2%). The weight change for the 4-month persistence subgroup was -4.4 kg, the weight change for the 7-month persistence subgroup was -5.1 kg, and the weight change for the 12-month persistence subgroup was -7.5 kg ($p < 0.001$) (Haase et al. 2021). At 7 months, there was a substantial drop in diastolic blood pressure but systolic blood pressure remained stable. At 7 months, almost 40% of patients dropped 5% of their body weight, and 14% lost more than 10%. The history of bariatric surgery has no effect on weight loss results. It is worth mentioning that only a minority of patients received liraglutide coverage, and the majority did not achieve the required maintenance dosage of 3.0 mg. Despite these limitations, the trial found clinically significant weight reduction related with liraglutide treatment in a real-world environment with limited insurance coverage. This shows that liraglutide, in conjunction with diet and exercise, may be a viable alternative for weight management in obese people. In a study aimed to investigate the expectations and experiences of people with schizophrenia, schizoaffective disorders, or first-episode psychosis who took part in an obesity treatment clinical trial utilizing daily liraglutide 3 mg injections (Whicher et al. 2021). The research also solicited healthcare experts' opinions on the feasibility of using this intervention in ordinary treatment. Seventeen patient participants were questioned, and the majority reported no difficulties with injection administration. Participants' despair about earlier medication-induced weight gain, the impact of weight loss on quality of life, and practical elements of involvement were key issues. Healthcare professionals and participants both highlighted recruiting obstacles but overall had a favorable experience (Whicher et al. 2021). The current study's strength lies in its detailed investigation of the effects of different Saxenda dosages on BMI and body fat percentage. The study provides a thorough investigation of the impact of Saxenda across various BMI ranges by categorising individuals into three groups and subsequently subdividing them. By analysing the statistical significance of the variances within each group, an analysis of variance improves the robustness of

the conclusions. The study's emphasis on Saxenda dosage brings new insights into the dose-response relationship, with higher dosages (1.8mg per day) displaying improved weight loss and body fat reduction outcomes compared to lower doses (1.2mg and 0.6mg). Despite its advantages, the study has certain drawbacks to consider. To begin, the sample size of 90 individuals may be considered limited, which may limit the findings' generalizability to bigger groups. Furthermore, the study's length of three and six months may not represent Saxenda's long-term effects or durability as a weight control tool. Further research with longer follow-up periods is required to examine the sustainability of the reported effects. Furthermore, the study did not investigate potential side effects or safety profiles associated with various Saxenda dosages, limiting comprehension of the overall risk-benefit ratio. Finally, the study's findings may be confined to the unique demographic and environment in which it was performed, and extending the results to other groups or situations should be done with caution.

Conclusion

The findings revealed substantial differences in BMI and body fat percentage within each group from baseline to three and six months of intervention. Higher Saxenda dosages (1.8mg) resulted with greater decreases in BMI and body fat percentage than lower doses (0.6mg and 1.2mg). According to the findings, larger dosages of Saxenda combined with exercise had a substantial influence on lowering BMI and body fat percentage in obese persons. It is crucial to note, that as the present study was conducted in a single tertiary care hospital of Hyderabad, Pakistan the generalizability of finding may be affected. Hence, more studies are needed to verify these findings and investigate the effects of Saxenda in various demographics.

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