

A follow up study on the knowledge, attitudes, skills and habits of Maltese family doctors in disease prevention and health promotion

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ABSTRACT

Background

Family doctors occupy a unique position to advocate for health promotion and disease prevention.

Objective

This study aims to evaluate the knowledge, attitudes, skills and habits of family doctors in Malta regarding health promotion and disease prevention and compare the results to similar studies carried out in 2000 and 2011.

Method

A validated questionnaire was distributed to all family doctors and general practitioner (GP) trainees in Malta. Structured interviews were conducted to further explore the results and formulate recommendations. Ethical permission was obtained for the study.

Results

The response rate stood at 9.8% (49/501). Respondents showed disparities between belief and action for clinical examinations, investigations or advice for two clinical scenarios echoing findings from earlier studies. Around 28.5% of respondents faced challenges in delivering health promotion and disease prevention interventions, with the main barrier quoted being a heavy workload and a lack of time (85.6%). Most respondents considered themselves minimally effective at promoting tobacco reduction (53.1%), minimally effective (49.0%) or ineffective (2%) at promoting alcohol reduction (51.0%), either reasonably (57.1%) or very effective (2%) at promoting weight loss (59.1%), and reasonably effective at promoting regular exercise (61.2%). Variances between respondents in private practice and those in public centres regarding the perceived effectiveness of these interventions were noted. Recommendations include restructuring the primary care service to introduce specialised

clinics for health promotion activities, further training, capitalising on digital solutions and dissemination of information.

Conclusions

The study highlighted the key barriers encountered in implementing disease prevention and health promotion interventions. Several actions that can enhance the practices of family doctors were proposed by respondents.

Key words

Attitude; disease prevention, primary; health promotion; knowledge; physicians, family.

INTRODUCTION

Noncommunicable diseases (NCDs) are the leading cause of morbidity and premature mortality worldwide, contributing to 74% of deaths. Behavioural risk factors have been implicated in the aetiology of most noncommunicable diseases, with unhealthy nutritional habits, lack of physical activity, increasingly sedentary lifestyles and harmful use of alcohol and tobacco increasing the risk (World Health Organization, 2023).

The situation in Malta follows the trends observed globally, with 90% of deaths attributable to NCDs and with behavioural risk factors implicated in over one third of deaths (OECD/European Observatory on Health Systems and Policies, 2023). Concerning statistics about the prevalence of behavioural risk factors in the Maltese population show that over 85% of adults aged 15 years and over consume less than the recommended five portions of fruit and vegetables per day (Eurostat, 2019a), 71.6% do not carry out any health-enhancing aerobic physical activity (Eurostat, 2019b), around 25% of respondents over 15 years smoke (World Health Organization, Regional Office for Europe, 2022a), while 15.5% binge drink at least once a month (Eurostat, 2019c). Additionally, Malta has some of the highest prevalence of overweight and obesity in adults and children (OECD/European Observatory on Health Systems and Policies, 2023).

Health promoting and diseases prevention strategies are the most cost-effective methods to address the rising epidemic of noncommunicable diseases, providing an opportunity to implement actions targeting several risk factors. Primary healthcare, and in particular family doctors, are well placed to deliver health promoting and disease prevention interventions to those most at risk and the most vulnerable, particularly given the accessibility potential of primary care in providing essential public health functions to the population (World Health Organization, 1978). Despite this potential, several factors impact the effectiveness and delivery of these interventions (Levine, 1987; Pace, Sammut and Gauci, 2014).

This study aims to evaluate the knowledge, attitudes, skills and habits of family doctors regarding disease prevention and health promotion, and investigate the barriers encountered in implementing health promotion interventions. The objective of this study is to propose actions that can enhance the practices of family doctors, both in the private and public sectors. The results will be assessed against similar studies carried out in 2000 and 2011 to determine whether there was any improvement in the knowledge, attitude, skills and habits of Maltese family doctors in implementing disease prevention and health promotion actions within their practices (Brotons et al., 2005; Pace, Sammut and Gauci, 2014).

METHOD

The modified version of the validated EUROPREV questionnaire that was used for the 2011 study (Pace, Sammut and Gauci, 2014) was amended and face-validated by two family doctors. The main difference between the amended version and the modified version of the original questionnaire was additional questions that emanated from the recommendations of the 2011 study. It was distributed via an online form during 2023 to 501 potential participants. These included 429 out of the 442 family medicine specialists listed in the Maltese Medical and Dental Specialists Register, and 72 General Practitioner (GP) trainees enrolled in the Specialist Training Programme in Family Medicine at the time of

the study. Thirteen family doctors could not be contacted. The questionnaire was distributed via post to 12 family doctors and emailed to the rest of the participants.

Identifying information about the participants was not collected to ensure anonymity and confidentiality, and aggregate data about demographic and professional information was used where possible to avoid identification. To assess knowledge, participants were presented with two clinical scenarios involving a 52-year-old male with a trivial cough and a 57-year-old female with a trivial dermatological issue. Both patients were new to the doctor, had no previous check-ups or tests, no known risk factors, and no personal or family history of major diseases. Other questions covered barriers encountered in implementing preventive approaches, availability of health promotional material, and interest in further health promotion training.

A reminder was sent via email and through the two professional associations, the Malta College of Family Doctors and the Association of Private Family Doctors, after 10 weeks to improve the response rate. The collected data was analysed using the Statistical Package for the Social Sciences (SPSS version 22) software. To determine the statistical significance, *p*-values were computed utilising the Exact Test for a 2xK table.

Structured interviews with 5 participants from the organisations representing family doctors (Malta College of Family Doctors *n*=1), GP trainers (*n*=1) and trainees (*n*=1), and healthcare professionals within the Health Promotion and Disease Prevention (HPDP) Directorate (*n*=2) were carried out online to elicit information on how to improve the response rate, identify the possible reasons for the discrepancies in the clinical scenarios, how to improve health promotion and disease prevention interventions, and how to make health promotion materials more widely available. The interviews were recorded, and thematic analysis was carried out to extract themes and issue recommendations from the outcomes. Ethical approval for the study was obtained from the Health Ethics Committee (Ref. HEC01.23).

RESULTS

The study achieved a response rate of 9.8% (49 participants out of 501 invitees), with females making up 51% of respondents. Table 1 provides an overview of the characteristics of the respondents detailing their work and teaching activities.

Table 1: Professional characteristics (working and teaching activities) compared to respondents in previous studies

Working and teaching activities	Percentage (this study)	Percentage (2011 study)	Percentage (2000 study)
Primary health centre	46.9%	40.7%	16%
Solo practice	53.1%	53.8%	58%
Public centre	42.9%	30.8%	19%
Private centre	57.1%	53.8%	55%
Postgraduate teaching activities	57.1%	41.8%	26%

Assessment of the doctors' knowledge on health promotion and disease prevention was carried out by analysing the responses for Case 1 and Case 2 clinical scenarios in Tables 2 and 3. The results obtained were compared to the responses obtained in the previous studies (Sammut, 2006; Pace, Sammut and Gauci, 2014).

Table 2: Examinations carried out, investigations ordered and advice given by respondents for the clinical scenario of a 52-year-old male presenting with a trivial cough (Case 1)

Exam / investigation / advice	This study		2011 study		2000 study	
	Should it be done? Yes %	Do I do it? Yes %	Should it be done? Yes %	Do I do it? Yes %	Should it be done? Yes %	Do I do it? Yes %
Blood pressure	93.9	93.9	98.9	97.4	99.0	88.0
Glucose level	83.7	89.8	94.0	88.3	80.0	80.0
Cholesterol level	83.7	83.7	93.1	93.0	73.0	74.0
Faecal immunochemical test	38.8	26.5	95.8	50.0	23.0	21.0
Chest X ray	18.4	40.8	91.7	68.8	52.0	44.0
Digital rectal exam	22.4	36.7	93.9	73.0	43.0	45.0
Advise to quit smoking	95.9	98.0	98.9	87.8	99.0	66.0
Advise less alcohol	93.9	93.9	98.8	87.5	97.0	62.0
Advise exercise	98.0	91.8	98.9	89.2	97.0	62.0
Advise weight loss	95.9	87.7	98.9	90.5	97.0	61.0
Body mass index (BMI) estimation	87.8	77.6	98.6	84.6	58.0	39.0

Table 3: Examinations carried out, investigations ordered and advice given by respondents for the clinical scenario of a 57-year-old female presenting with a trivial dermatological problem (Case 2)

Exam / investigation / advice	This study		2011 study		2000 study	
	Should it be done? Yes %	Do I do it? Yes %	Should it be done? Yes %	Should it be done? Yes %	Do I do it? Yes %	Should it be done? Yes %
Blood pressure	89.8	93.9	97.4	89.3	95.0	81.0
Glucose level	85.7	87.8	96.9	86.9	88.0	78.0
Cholesterol level	81.6	85.7	96.3	82.1	76.0	75.0
Faecal immunochemical test	40.8	24.5	90.9	56.5	22.0	20.0
Cervical cytology	63.3	42.9	94.4	81.0	77.0	64.0
Breast examination	57.1	63.3	97.0	87.5	88.0	73.0
Advise to quit smoking	95.9	95.9	95.2	89.5	95.0	61.0
Advise less alcohol	95.9	93.9	97.4	86.5	95.0	60.0
Advise exercise	93.9	91.8	97.6	87.0	95.0	59.0
Advise weight loss	98.0	91.8	96.4	86.8	95.0	60.0
Body mass index (BMI) estimation	85.7	83.7	95.7	82.8	59.0	37.0

Table 4 presents the assessment of the respondents' attitudes towards disease prevention and health promotion activities. Nearly half (42.9%) of respondents did not report any difficulty in promoting disease prevention and health promoting activities; however a quarter reported either some difficulty (26.5%) or little difficulty (28.6%) in this area.

Table 4: Self-reported difficulty to carry out prevention and health promotion activities.

	This study		2011 study	2000 study
	N	%	%	%
Not difficult	21	42.9	41.8	20.7
Very little difficulty	14	28.6	20.9	30.3
Some difficulty	13	26.5	36.3	44.5
Very difficult	1	2.0	1.1	4.5
Total	49			

The primary barrier identified by respondents was a heavy workload and a lack of time (85.6%), while other barriers included insufficient personal training (20.4%), the belief that patients doubted the effectiveness of prevention measures (18.4%), lack of consensus and discrepancies in recommended health promotion and disease prevention actions (14.3%), and a lack of clarity on who is responsible for carrying out these activities in the primary care setting (12.2%).

Table 5 presents the respondents' beliefs on how effective they are in promoting tobacco cessation, alcohol reduction, weight management and regular exercise.

Table 5: Self-reported effectiveness at helping patients reduce tobacco use, reduce alcohol consumption, achieve or maintain normal weight and practice regular physical exercise.

	How effective do you feel you are in helping patients...							
	reduce tobacco use?		reduce alcohol consumption?		achieve or maintain normal weight?		practice regular physical exercise?	
	N	%	N	%	N	%	N	%
Ineffective	0	0.0	1	2.0	1	2.0	0	0.0
Minimally effective	26	53.1	24	49.0	19	38.8	17	34.7
Reasonably effective	22	44.9	22	44.9	28	57.1	30	61.2
Very effective	1	2.0	2	4.1	1	2.0	2	4.1
Total	49		49		49		49	

Assessment of the respondents' access to health promotion materials and training revealed that 41.7% and 30.6% lacked easy access to health promotion material in digital and hard copy formats respectively, while 35.4% of respondents never received training in health behaviour counselling, and 76.6% of respondents never heard of integrated brief interventions for NCD risk factors in primary care. Respondents reported markedly variable interest in receiving training, with 75.5% of respondents interested in brief interventions on healthy eating, 72.9% of respondents interested in the European Physical Activity on Prescription (EUPAP), and 37.5% of respondents interested in brief interventions for tobacco cessation. In the previous 12 months, 20.8% of respondents never referred patients to the weight management service, 31.3% of respondents never referred patients to the smoking cessation clinic, 72.3% of respondents never referred patients to the lifestyle clinic, 62.5% of respondents never referred patients to the chronic disease management clinic, and 59.2% of respondents never referred patients to the chronic kidney disease prevention clinic. Cross-tabulations for Cases 1 and 2, for almost all variables, revealed statistically significant differences between the belief that certain activities should be carried out and the actual implementation of these activities by respondents ($p < 0.05$). The only exceptions were advising against sedentary behaviour ($p=0.082$) for Case 1 and advising against tobacco use ($p=0.81$) and promoting weight loss ($p=0.083$) for Case 2.

When asked how difficult is it (for you) to carry out prevention and health promotion activities, there were no statistically significant differences between respondents engaged in post-graduate teaching activities and those who were not ($p=1.000$). Similarly, there were no statistically significant differences in self-effectiveness for promoting tobacco cessation ($p=0.620$), reduction in alcohol consumption ($p=0.322$), weight loss ($p=0.801$), and regular physical activity ($p=0.665$). When comparing doctors working in public centres with doctors in private practice, there were no statistically significant differences in how difficult is it (for you) to carry

out prevention and health promotion activities ($p=1.000$). However, respondents in private practice were statistically significantly more likely to feel effective at promoting tobacco cessation ($p=0.001$), reduction in alcohol consumption ($p=0.002$), weight loss ($p=0.044$), and regular physical activity ($p=0.004$) to their patients.

Respondents working in public centres were more likely to be interested in receiving training on brief interventions for healthy eating ($p=0.035$) and the EUPAP ($p=0.024$), but not in brief interventions in tobacco cessation ($p=0.784$). There were no statistically significant differences between private and public sector respondents in referring patients to the weight management service ($p=0.064$), smoking cessation clinic ($p=0.514$), lifestyle clinic ($p=0.758$), chronic disease management clinic ($p=0.060$), and chronic kidney disease prevention clinic ($p=0.801$).

Findings from the structured interviews

Various common themes contributing to the low response rate were provided by the participants. These included feedback on length and timing of the questionnaire, logistical issues, such as incorrect email addresses, and participant related factors, such as apathy due to receiving multiple questionnaires, a lack of change despite similar studies, and lack of time to reply to the questionnaire.

Respondents attributed time constraints as a reason for the discrepancies observed in the clinical scenarios on what should be done and what is done in practice. Both the GP Trainer and GP Trainee highlighted the patient's expectations and agenda as another reason for this discrepancy. Discrepancies in practice can be addressed through Clinical Professional Development (CPD) sessions and training, a longer initial consultation, specific clinics focused solely on delivering health promotion advice and integrating electronic alerts that encourage doctors to carry out a health promotion intervention. The promotion of the appointment system within the primary healthcare department can strengthen the doctor-patient relationship through continuity of

care. Comprehensive training to improve health promotion delivery and incorporating health promotion advice as part of the treatment plan were emphasised. The importance of training featured heavily throughout the discussions, with emphasis on training the trainees. Training sessions can be held in small group sessions, lectures or workshops, but the training method should contain a theoretical and practical component where the individual can receive feedback. The presence of community based ancillary facilities and GP clinics set up exclusively for delivering health promotion would provide patients with tailored and specific advice. A yearly health check system with subsequent referral process, if necessary, was also suggested. The integration of brief intervention flowcharts into practice, possibly through the electronic patient record, is another initiative which would aid in the delivery of health promotion advice. Adequate resources, especially human resources, are vital in implementing these recommendations.

When discussing factors that contribute to a lower perceived self-effectiveness in carrying out health promotion activities, several reasons were identified. These included the patient's reluctance to engage in health promotion behaviours, the respondents' personal experience and the training received in this field. Societal acceptance of smoking and alcohol drinking was suggested as a reason why respondents considered themselves to be less effective at promoting tobacco cessation and alcohol reduction compared to promoting exercise and weight loss. Respondents agreed that screening and brief interventions could be integrated into their practice following appropriate training. This could be supported through clinical decision support software in electronic patient records.

With regards to access to health promotion materials, respondents noted that they could be made more available by ensuring that physical copies are at hand during consultations. Improving the accessibility of health promotion messages can be achieved by streamlining the HPDP website to facilitate doctors and patients with accessing the materials. Waiting area

screens within clinics could be used to display health promotion advice. A greater emphasis on disseminating health promotion messages through social media and apps would improve visibility and engagement, particularly with a younger audience. Despite the digital shift, hard copies of health promotion material are still used, and efforts should be made for the material to be transported directly to the clinics while clinic management should ensure an adequate stock of these materials.

Health promotion training features throughout the family doctor specialisation programme. These are carried out through regular lectures, tutorials and reviews of video consultations focusing on health promotion advice. While training ideally should occur in small group sessions to improve abilities, webinars and lectures are also used. To enhance the ability to implement health promotion initiatives, group sessions incorporating educational and practical components, along with observation and feedback from trainers, are the most effective approach. The low referral rate to the prevention services was primarily attributed to a lack of awareness on the clinic's existence, clinic disruptions following the COVID-19 pandemic, unclear referral criteria and methods, and a poor opinion of the clinics' outcomes. Improving the referral rates to clinics focusing on health promotion could be achieved through regular reminders to family doctors via memo or email, highlighting the clinic's role and referral pathway, raising awareness through CPD sessions elaborating on clinic details and the potential benefits of referral, and providing new intakes of GP trainees with an orientation session on the availability of these clinics.

Making Every Contact Count (MECC) is a type of screening and brief interventions behaviour change strategy that leverages the countless daily interactions between organisations, individuals and others to help encourage positive changes in their physical and mental health, as well as overall well-being (World Health Organization, Regional Office for Europe, 2022b). When asked how the MECC programme can be implemented,

respondents noted that it is necessary to identify how to manage time constraints, raise awareness and training, and improve access of information for family doctors to give to their patients.

DISCUSSION

This study aimed to assess the knowledge, attitudes, skills and habits of Maltese family doctors and GP trainees in health promotion and disease prevention. The results from the clinical scenarios showed a consistent disparity between the belief that certain activities should be carried out (such as promoting physical activity, promoting weight loss and BMI estimation) and the actual implementation of these activities by respondents. Reasons that could explain these differences at the organisational, structural and professional levels include time constraints, low prioritisation of health behaviour change, perceptions of the health care professionals' role, negative attitudes and a lack of necessary skills and knowledge (Strid, Wallin and Nilsagård, 2023). Interestingly, for some activities, the percentage of doctors who carried out the activity was higher than the percentage of doctors who felt the activity should be done. Possible explanations include over testing despite perceived clinical utility (O'Sullivan et al., 2018), and social desirability bias to conform to perceived response acceptability (Holden and Passey, 2009). Another possible explanation relates to the questionnaire format; the questions "should it be done?" and "do I do it?" in the online questionnaire were not side-by-side as they were in the paper-based questionnaire, but after each other.

Across the three studies spanning over 20 years, respondents are reporting less difficulty in carrying out disease prevention and health promotional activities (Sammut, 2006; Pace, Sammut and Gauci, 2014). The primary barrier reported remains lack of time due to a heavy workload, which appears to be considerably worse when compared to previous studies (Sammut, 2006; Pace, Sammut and Gauci, 2014).

The WHO recognises brief interventions as effective for quitting tobacco, reducing alcohol use, increasing physical activity, promoting

healthy eating, and managing weight (World Health Organization, Regional Office for Europe, 2022b). Compared to the 2011 study, respondents felt that they were less effective at promoting tobacco cessation, alcohol reduction, and regular exercise, and more effective at promoting weight loss (Pace, Sammut and Gauci, 2014), with respondents in private practice feeling more effective than respondents working in public centres. The introduction of the training programme was an opportunity to train family doctors to integrate preventive care into regular primary health care service delivery. However, training does not appear to have been actively translated to practice. Despite the need for further training, respondents reported variable interest in receiving training on brief interventions. GPs working in private practice appeared less interested when compared to their colleagues working within public centres, and this observation could be partly explained by the fact that they feel more effective in delivering health promotion activities. An important consideration is the apparent poor access to health promotional materials, which are critical tools that can be used by respondents for the management of risk factors when they have no time available for other, more time-consuming brief interventions (World Health Organization, Regional Office for Europe, 2022b). Each professional encounter should be an opportunity to guide patients towards a healthier lifestyle (World Health Organization, Regional Office for Europe, 2022b). A stronger effort is needed to re-organise and re-orientate primary care practices towards the "brief interventions" approach which has been shown in literature to be relatively cheap and certainly more effective.

Referral frequencies to prevention clinics varied, with weight management and smoking cessation clinics being the most popular. Proximity between clinics in public centres to specific intervention clinics within the primary healthcare system is seemingly not more conducive for doctors working in the public to refer patients and the reasons for this merit further exploration. Other reasons may be more critical to improve referrals towards preventive clinics such as improving

coordination of services, strengthening of the public sector, and increasing public awareness of the services (Eskandari, Abbaszadeh and Borhani, 2013).

The implementation of disease prevention and health promotion activities in primary care is influenced by various factors organised into a five-level ecological model: intrapersonal, interpersonal, institutional, community and public policy. Intrapersonal factors include professionals' beliefs, experiences, skills, knowledge and self-concept regarding disease prevention and health promotion activities. Interpersonal factors involve the attitudes and behaviours of patients, specialists, practice managers and colleagues, which impact the feasibility of implementing disease prevention and health promotion activities. Institutional factors recognise primary care as suitable for disease prevention and health promotion activities but highlight obstacles such as workload, time constraints, limited referral resources and the dominance of the biomedical model, which focuses on disease treatment. The effectiveness of financial incentives and tools like guidelines and reminders depends on professionals' attitudes toward them. Community factors encompass patients' social and cultural characteristics (e.g. religion, financial resources), local referral resources, media messages, pharmaceutical industry campaigns and the emphasis on disease prevention and health promotion activities in university curricula. Public policy influences resource distribution, thereby impacting the implementation of disease prevention and health promotion activities (Rubio-Valera et al., 2014).

Strength and limitations

The study's strength is that it is a follow-up study spanning 20 years of primary health care health promotion and disease prevention practice in Malta. The study had several limitations that need to be taken into consideration when interpreting the results. The study had a low response rate of 9.8% leading to several significant limitations. Such studies have limited external validity of the results, particularly as doctors who are

interested in the subject could have been more inclined to participate leading to non-response bias. Distribution of the questionnaire among the whole population softened the impact of the low response rate; however, under- or over-representation of certain groups could lead to sampling bias and limited generalisability of the results. Social desirability bias could have arisen as participants may have been inclined to provide answers that they believe will make them look good, particularly during the structured interviews, while the small number of responses also limits the statistical power of the study. The actual response rate is probably higher, as the actual number of family doctors actively practising in Malta is unknown while those on the list may not all be practicing.

CONCLUSION

Whilst taking into consideration the study limitations, this study evaluated the knowledge, attitudes, skills and habits of family doctors regarding disease prevention and health promotion interventions, and highlighted the key barriers encountered in implementing a "Making Every Contact Count!" approach. Several actions that can enhance the practices of family doctors were proposed by respondents.

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