

2016

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Sheila Keogan

Technological University Dublin, sheila.keogan@student.dit

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### Recommended Citation

Keogan, S., Burns A., Babineau, K. & Clancy, L.(2016). Irish Healthcare Staff - Smoking, Training and Activity in Treatment of Tobacco Dependence - An Online Survey. *Tobacco Prevention & Cessation* doi.org/10.18332/tpc/64946

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# Irish healthcare staff–smoking, training and activity in treatment of tobacco dependence –an online survey.

Sheila Keogan<sup>1</sup>, Annette Burns<sup>1</sup>, Kate Babineau<sup>1</sup>, Luke Clancy<sup>1</sup>

## ABSTRACT

**INTRODUCTION** Ireland has strong tobacco control legislation but must get smokers to stop if the national plan of having a smoking prevalence of 5% by the year 2025 is possible. Involving all healthcare staff in this effort is regarded as important. We surveyed the present situation.

**METHODS** An online survey was conducted of 1257 healthcare staff; 520 nurses, 440 doctors, 297 dentists in 2014. The sample was accessed with the help of the Irish Nurses and Midwives Organisation (INMO), Irish Medical Organisation (IMO) and the Irish Dental Association (IDA). The questionnaire addressed individual smoking habits and attitudes, training and practice with regard to smoking cessation.

**RESULTS** The prevalence in our sample was 8.5%. Nurses had the highest prevalence. Doctors had the highest never smoked rate. Smoking was related to age.

Attitudes to treating smoking were positive among all HCP groups. Overall 96.4% of HCPs agreed that they should routinely ask patients about smoking and 94% agreed that they should advise all smokers to quit. 20.7 % of HCPs said they had formal training in smoking cessation and this was correlated to asking or giving advice. 42.9% with training while only 7.6% without training felt well prepared to assist smokers quit ( $p < 0.001$ ).

Time, work priorities and lack of training were identified as the main barriers by all HCPs. Doctors particularly reported time problems ( $\chi^2 = 158.021$ ,  $p < 0.001$ ).

**CONCLUSION** Prevalence of smoking is low in HCPs, formal training in SC is low but the need for HCPs to be involved in SC is widely accepted.

## AFFILIATION

<sup>1</sup>TobaccoFree Research Institute Ireland, Dublin

## CORRESPONDENCE TO

Dr Sheila Keogan, TobaccoFree Research Institute Ireland, Dublin, Focos Research Institute, D.I.T Kevin Street, D8 Dublin, Ireland

## KEYWORDS

Cigarette smoking, attitudes, training, healthcare professionals, smoking prevalence, tobacco treatment

## INTRODUCTION

Research suggests that a wide variety of Healthcare Professionals can be effective in delivering brief smoking cessation interventions<sup>1</sup>. Furthermore, smoking cessation interventions appear to be more effective when delivered by two clinician types, for instance a physician and a nurse<sup>1</sup>. It is therefore recommended that all clinician types or Healthcare professionals should provide smoking cessation interventions and interventions involving the combined efforts of more than one clinician type should be encouraged<sup>1</sup>. Clearly it is therefore necessary to ensure all healthcare professionals

receive adequate training in smoking cessation and are thus well-prepared to take advantage of all opportunities to ask patients about smoking and assist with cessation.

The smoking status of healthcare professionals is important for a number of reasons. First to support the health of this group we must ensure the health system they work in continues to promote their own health generally and more specifically by providing a smoke free workplace and supporting those trying to quit smoking. Secondly the smoking status of physicians and ‘health staff’ appears to impact upon their willingness to engage with patients regarding tobacco

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use<sup>4,12</sup>. An international survey found that physicians who smoked were less likely to initiate cessation interventions in comparison to their non-smoking counterparts<sup>13</sup>.

A 2011 survey of respiratory healthcare professionals across Europe found a current smoking prevalence of 4.4% and 27.9% ever-smokers (smoked >100 cigarettes in their lifetime), with 23.5% ex-smokers<sup>14</sup>. By comparison, a recent US survey reported <6% tobacco use among healthcare professionals but a significantly higher rate of 13% among nurses<sup>15</sup>.

In Ireland, a recent audit of smoking prevalence and awareness of smoking cessation services among staff across the health system found a staff smoking prevalence of 15% (10.9% daily), with 27% ex-smokers. However, this included management/administration staff and general support staff and the prevalence was lower among front-line healthcare staff<sup>16</sup>.

Tremblay et al. in 2009 reported that there is consistency across health professional groups (in spite of the variation in roles, work settings, patient populations and reimbursement) in the factors which are positively associated with smoking cessation counselling. In this Canadian study, staff were more likely to provide counselling if they felt that it was part of their role, that they would be effective and that they had sufficient knowledge of community cessation resources<sup>17</sup>. Worryingly, the 2013 survey of Health Service Executive (HSE) staff in Ireland revealed low levels of awareness of HSE quit services among medical/dental staff (28.9%) and (while nurses were better (78.9%)) only 64% of HSE staff overall were aware of some HSE quit services<sup>16</sup>.

Interventions to improve self-efficacy to engage in effective counselling, and thus optimise counselling practices mentioned by Tremblay et al. included interactive training workshops and instruction through the internet (more accessible, greater reach)<sup>17</sup>.

Evidence-based clinical practice guidelines state that training clinicians increases the amount of smokers who receive treatment, including discussions of benefits/obstacles to quitting, medication, and the provision of support<sup>1</sup>. In 2009 O'Donovan found just 14% of nurses surveyed in Ireland had received training in smoking cessation<sup>18</sup> but a concerted effort is now being made by the HSE to ensure that all front line staff are trained in brief intervention. It is important to profile the current situation in Ireland in relation to formal smoking cessation training received by HCPs and the effectiveness of the training that has been received. It is thought that the receipt of any smoking cessation training is likely to be associated with improvements in rates of smoking cessation advice delivery and referral.

Lack of time is frequently reported by healthcare professionals as a major barrier to smoking cessation intervention both in primary care<sup>19-22</sup> and hospital settings<sup>18,23</sup>. There is also a belief, it seems, among healthcare professionals that interventions are not effective or that they personally will not be effective in delivering them<sup>20,24</sup> due to a lack of adequate training<sup>18,23</sup>. Perceived or assumed patient resistance<sup>21,22</sup> and a tendency to assume patients are not motivated<sup>25</sup> have also emerged in the research as barriers in spite of numerous studies showing a positive attitude amongst patients to smoking cessation advice. Interventions should address this knowledge gap by making efforts to educate healthcare staff about the often positive attitudes of smoking patients towards quitting<sup>26,27</sup>. Additional barriers include HCPs not regarding smoking cessation counselling as part of their role<sup>23</sup> and lack of reimbursement<sup>20-22</sup>.

The objective of this study was to establish the current smoking prevalence, attitudes to treating tobacco dependence, current treatment actions and training received among healthcare professionals in Ireland.

## METHODS

### Setting and procedures

The sample was gathered, using a cross-sectional study design, from three distinct healthcare professional organisations representing doctors, dentists and nurses in Ireland: The Irish Nurses and Midwives Organisation (INMO), Irish Medical Organisation (IMO) and the Irish Dental Association (IDA), respectively. Each of these professional organisations acted as partners in the research, promoting the project and circulating the survey questionnaire to their members.

Emails targeting 3,900 IMO members and 1,000 IDA and 1,000 INMO members were sent out with reminder emails sent 2 weeks later. Responses were received from 25 Sept-25 Oct 2013. The survey closed 2 weeks post reminder. In addition to emailing a link to the survey the Tobacco Free Research Institute also circulated flyers at the annual conferences of each of the participating organisations (Supplementary file 1).

In the selection process for nurses all 'general' INMO members were extracted and those for whom email addresses available were retained (n=6,000+). Nurses were stratified according to discipline and randomly selected according to the proportions of the different disciplines to select a total of 1,000 members who were then emailed. In addition to the Tobacco Free Research Institute (TFRI) emailing a link to the survey, the survey was also promoted at an annual nursing conference and in an advertisement in the May

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edition of the INMO monthly magazine 'WIN' which is circulated to their members in hard copy and also available on the INMO website. This advertisement mentioned the prize draw associated with the survey. Dentists were further targeted via promotion at an annual conference the survey link was sent via an email from the Assistant CEO of the Irish Dental association rather than directly from TFRI.

The IMO is the only organisation in Ireland which includes doctors from all areas and specialities. The IMO sent a link to the survey to all doctors registered with the IMO for whom an email address was available excluding those who were retired, not working at the time, students and those living overseas. In the case of doctors, there were no opportunities for promotion of the survey at a national conference or in a journal.

Data was downloaded and closed off one month after it became live. While an overall response rate of 21.3% (N=1,257) was achieved, the rates varied by organisation with 52% of nurses (n=520), 29.7% of dentists (n=297) and 11.3% of doctors (n=440) responding. While 1,257 HCPs clicked the link and opened the survey, 1,227 actually completed the questionnaire. Data for profession and smoking status was available for 1218 of these.

### Measures

The survey consisted of a 20 page questionnaire with 46 items which were predominantly tick-box questions with some free-text comment boxes included e.g. for 'age started smoking'. Participants were advised that data would be de-identified and therefore responses would remain confidential. Complete anonymity was not possible as respondent HC profession and speciality were required. Questions were designed to collect data relating to: smoking habits, attitudes, knowledge and behaviours in relation to patient smoking and their role in assisting patients to quit and readiness to complete same. We targeted five distinct healthcare professional groups; doctors, dentists, general nurses, public health nurses and midwives, thus allowing comparisons within and across healthcare professions.

The questionnaire was piloted to a number of Healthcare professionals. Their feedback and any problems that arose were addressed and rectified prior to the administration of the questionnaire to the proposed population of HCPs.

### Statistical Analysis

Data were downloaded from Survey Monkey and transferred into Excel format prior to analysis with SPSS Statistical Software Package<sup>21</sup>. Descriptive statistics were generated to

create a summary of smoking prevalence, current cessation activities and attitudes, training and awareness of resources among healthcare professionals in Ireland. Chi-square tests were used to compare differences between groups, for instance in terms of profession, smoking status and training status. Subgroup analysis was performed based on profession.

## RESULTS

### Formal training

Just 244 HCPs (20.7%) reported that they had received formal training in smoking cessation approaches. Profession was significantly related to having received formal training. While low across the board (highest public health nurses with 33.3% (adjusted residual = 3.9)), just 7% of dentists (adjusted residual = -6.4) and 11.9% of general nurses (adjusted residual = -3.1) reported receipt of training (see Table 1). For the majority, this was part of specialist training.

HCPs who have received formal training in smoking cessation were significantly more likely to record smoking status, to advise and refer patients, and to record delivery of advice. They were also more likely to see themselves as role models and receipt of formal training was significantly related to readiness to assist patients ( $\chi^2 = 223.216$ ,  $p < .001$ ). 42.9% of HCPs who reported formal training felt well-prepared to assist patients with smoking cessation whereas just 7.6% of those who had not received formal training felt well-prepared (Table 4). Age was also significantly related to feeling prepared ( $\chi^2 = 24.317$ ,  $p < .001$ ) with over 20% HCPs in the 45-64 age group feeling unprepared (standardised residual = 3.2, adjusted residual = 4.5).

HCP smoking status was not significantly related to routinely recording smoking status, routinely advising to quit, referring to specialist smoking cessation services or feeling well-prepared to assist.

## DISCUSSION

Smoking prevalence in the Irish population stands at 19.5%, a decline of 4% since June 2010<sup>34</sup>. This compares to a current smoking prevalence of 8.2% amongst healthcare professionals in Ireland with no significant differences between professions. A 2006 survey found a much higher rate of 21.7% current smoking among 114 non-consultant hospital doctors in Dublin<sup>28</sup>. Though it should be noted at that time the rate in the general population was 29% (Slan 2007). Encouragingly, it seems decreases have occurred across the board.

The prevalence found in the current survey is also lower than that found in a 2013 survey of Irish Healthcare staff

**Table 1. Demographic information %within professions and for total sample (n=1227) \***  
 1( $\chi^2=158.021, p<.001$ ), \*2 ( $\chi^2=89.962, p<.001$ )

	Doctors	Dentists	General Nurses	Public Health Nurses	Midwives	Total
<b>Female</b>	48.6	45.3	94	99.3	99.4	67.9
<b>Age group</b>						
<b>18-29</b>	18.2	7.6	13	2.8	14	12.6
<b>30-44</b>	39.4	45.7	52.2	40.4	36.5	42.5
<b>45-64</b>	39.2	41.2	34.2	56.7	47.8	42.2
<b>65 or older</b>	3.2	5.5	.5	.0	1.7	2.8
<b>Current smoker</b>	6.5	9.4	12.6	9.2	6.8	8.5
<b>Never smoker</b>	68.6	60.3	47.5	52.5	53.7	59.4
<b>Ex-smoker</b>	24.9	30.3	39.9	38.3	39.5	32.1
<b>Formal training in smoking cessation *2</b>	31.9	7.0	11.9	33.3	14.0	20.7
<b>Feel well-prepared to assist patients</b>	12.3	39.5	39	33.1	45.2	29.7
<b>Refers smokers to a specialist SCS</b>	22	5.6	35.8	21.6	29.2	21.3
<b>Commonly reported barriers</b>						
<b>More immediate problems to address</b>	83.2	79.9	76.4	73.3	75.4	79.2
<b>Time with patients limited</b>	82.6*1	63.7	67.4	70.5	73.4	73.2
<b>Other practice priorities</b>	68.1	63.6	74.6	74.8	80.4	70.6

### Prevalence

The overall current smoking prevalence in our sample was 8.5% (n=1218). Profession was significantly related to smoking status, with significantly more general nurses in both the current smoking and ex-smoking groups (standardised residuals = 1.9; 1.9) and significantly fewer general nurses reporting as never smokers (standardised residual = -2.1). There were significantly more doctors in the never smoker category (2.5) and significantly fewer ex-smokers who are doctors (-2.6). (Table 2)

**Table 2 Smoking status by profession (Standardised residuals in brackets and significant starred)**

	Doctors	Dentists	General Nurses	PH Nurses	Midwives	Total
<b>Current smoker</b>	28 (-1.4)	27 (0.6)	23 (1.9*)	13 (0.3)	12 (-0.8)	103
<b>Never smoker</b>	295 (2.5*)	173 (0.2)	87 (-2.1*)	74 (-1.1)	95 (-1)	724
<b>Ex-smoker</b>	107 (-2.6*)	87 (-0.5)	73 (1.9*)	54 (1.3)	70 (1.7)	391

( $\chi^2=34.649, p<.001$ )

Age was significantly related to smoking status but gender was not. There were significantly fewer HCPs who smoke aged 45-64 and significantly more ex-smokers in this age group. In the 18-29 age group there were significantly more never smokers (standardised residual = 2.5) and less ex-smokers (standardised residual = -3.7) (Table 3). The overall prevalence is much lower than in the general population which is 19.5 at present<sup>34</sup>

(15%) though this was lower in front line staff, nurses (11%) and medical/dental HCPs (4.4%)<sup>16</sup>. This 2013 survey had a good response rate but combined medical and dental staff and included only 45 doctors/dentists in total<sup>16</sup>. The current paper with 440 doctors and 297 dentists therefore provided a better indication of actual prevalence rates specific to individual HCP groups.

While the smoking prevalence among HCPs in this study is lower than the general population and previous rates seen in HCPs in Ireland, it is notably higher than

international figures in the USA (<6%)(15) and Europe (4.4%)<sup>14</sup>. However, smoking rates among HCPs in Ireland are still markedly lower than other countries (41% among doctors in China)<sup>29</sup>.

Previous studies found HCP smoking status was associated with willingness to engage with their patients regarding smoking<sup>4-13</sup>. In the current study there was no association between smoking status and routine recording of status, routine advising, referring to smoking cessation services or feeling prepared to assist. This may represent

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Table 3 Current smoking by age group for Doctors, Dentists and Nurses combined (%)

	18-29	30-44	45-64	65+	Total
Current smoker	9.8	9.7	6.6	12.5	8.5
Never smoker	75.2	57.8	57.3	43.8	59.4
Ex-smoker	15	32.5	36.1	43.8	32.1
Total	100	100	100	100	100

( $\chi^2 = 30.096$ ,  $p < .001$ )

### Attitude to Smoking Cessation role

Overall 96.4% of HCPs agreed that those in their profession should routinely ask patients about their smoking habits. Smoking status (i.e. current, ex or never smoker) was not related to the belief that those in their profession should routinely ask patients about smoking habits. There were also no significant differences in terms of profession, gender or age.

94% of HCPs agreed that those in their profession should routinely advise their smoking patients to quit. Profession ( $\chi^2 = 15.08$ ,  $p = .005$ ) and smoking status ( $\chi^2 = 6.516$ ,  $p = .038$ ) were significantly associated with this belief. Agreement rates were higher among doctors (96%; adjusted residual = 2.2) and never smokers (95.3%; adjusted residual = 2.5) and lower among general nurses (88%; adjusted residual = -3.6). HCP smoking status was also related to the belief that patients' chances of quitting increase if advised to quit by a member of their profession ( $\chi^2 = 20.561$ ,  $p < .001$ ).

Table 4 Smoking Cessation training and Treatment of smoking

	Training	No training	P value
	%	%	
Routinely record smoking status	83.2	74.6	.020
Routinely advise patients on smoking cessation	81.7	63	<.001
Routinely record delivery of SC advice	59.2	39.8	<.001
Routinely refer to specialist SC services	31.3	18.7	<.001
Believe they are regarded as role models	86	77.3	.003
Feel well-prepared to assist	42.9%	7.6	<.001

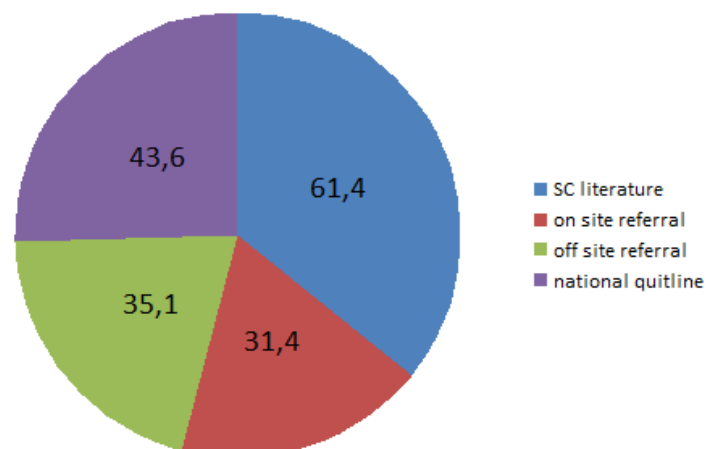
HCPs were asked to say if smoking cessation (SC) materials- SC literature, SC clinic on-site or off-site, or National Quitline Telephone number were available in their workplace. SC literature was the most frequently available resource while only approximately two thirds were aware of referral procedure (Fig 1)

a shift due to increased understanding of HCPs role in SC as many of those studies are old. There are also likely to be cultural differences and previous Irish HCPs attitudes are unknown. HCP smoking status was however associated with the belief that those in their profession should routinely ask patients about smoking and the belief that patients' chances of quitting increase with advice from a member of their profession.

As seen in previous studies<sup>18-23</sup>, time was frequently reported as a barrier, especially by doctors. Barriers in relation to role, seen in a previous study of physicians<sup>23</sup>, however did not emerge, with over 94% of HCPs agreeing those in their profession should routinely ask about smoking and advise patients to quit. In spite of this sense of responsibility and positive acceptance of role less than 30% of HCPs felt well-prepared to assist patients with smoking cessation, mirroring the findings of previous studies where HCPs reported poor intervention skills or a lack of training<sup>18, 20, 23</sup>.

Evidence-based clinical practice guidelines argue that training clinicians on discussing the benefits / obstacles to quitting, medication, and the provision of support increases the amount of smokers who receive treatment(1). Given

Figure 1. Percentage of each Smoking Cessation Resource Materials available to HCPs



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this fact, it is surprising to see that just 20.7% of HCPs in our study had received formal training in smoking cessation. However, this figure is still notably higher than the rates of formal training on smoking cessation nurses in Ireland received (14%) in 2009<sup>18</sup>. This low training prevalence perhaps helps to explain why the majority of HCPs surveyed did not feel well-prepared to assist patients. It is therefore important to note that a determined effort is now being made to ensure that all HCPs in Ireland receive at least training in brief intervention techniques.

In the current survey, training was associated with increased rates of advice and referral but even with training, referral rates remain disappointingly low. The numbers of HCPs reporting the availability of resources and services such as smoking cessation literature and on-site and off-site referral services was also low (even after formal training) and this may form part of the explanation for the failure of HCP cessation training and role attitudes to translate into action in the form of referrals. The 2013 survey of Health Service Executive staff revealed low awareness of HSE quit services among Medical/Dental staff which led to recommendations for targeted interventions to boost their awareness of quit services<sup>16</sup>. The current survey showed this awareness of resources is quite low in HCPs in Ireland across the board, but dentists were lowest on all counts. It is a little unclear (in relation to dentists and HCPs generally) whether the low numbers reporting, for instance, availability of on-site referral is due to an actual lack of resources and services or simply a lack of awareness among HCPs regarding the services and resources available to them. It is likely a combination of both. Support for the lack of resources argument is provided by a 2009 survey in Ireland which showed that while smoking cessation services are available throughout Ireland, they are largely inadequate<sup>30</sup>.

However, research also shows that behaviours like advising and referring are more difficult to change. It is easier to increase asking and recording of smoking status<sup>31</sup>. Nonetheless education and training have been shown to increase rates of smoking cessation advice provided in primary care settings<sup>31</sup>. Tremblay et al. also reported on this incomplete implementation of smoking cessation care, which is consistent across health professional groups. In this Canadian study, staff were more likely to ask smoking status and advise to quit and less likely to assess readiness; assist with quitting; refer to external resources or arrange follow-up<sup>17</sup>. The authors suggested this might be due to the fact that asking and advising are generally simple tasks that can be completed very quickly and are therefore more commonly practiced. In contrast, assisting, referring

and arranging require more time, knowledge, skills and awareness of community resources<sup>17</sup>.

Limitations of the study: This is only a snapshot but there are encouraging aspects showing some positive changes. There are always worries about representativeness and generalisability when the response rate is low as it was particularly among doctors but other surveys give similar results for prevalence of smoking. The survey is much wider than smoking prevalence in doctors who were some quarter of responders and the results give us further insights into training and attitudes across the five different HCP groups in the same survey

## CONCLUSION

Smoking harms almost every organ of the body<sup>32</sup> and is the second leading cause of modifiable morbidity and mortality worldwide<sup>33</sup>. Tobacco use now has disease status (International Classification of Diseases, Ninth Revision) and there is a need to increase awareness of the importance of addressing smoking as a HCP would address any other disease. Addressing smoking is just as crucial as treating the other diseases a patient may have and HCPs need to have the knowledge and training to consistently deliver this treatment themselves or failing that refer patients to an appropriate cessation service.

Smoking prevalence among Irish HCPs is not the best internationally but also not the worst. Current smoking was negatively associated with the belief that they should routinely advise patients to quit and that this advice helps to increase patients' chances of quitting.

At present while the majority of HCPs in Ireland believe treating smoking is part of their role and something they 'should' be doing, the majority neither feel well-prepared to assist themselves nor are they referring patients to specialist smoking cessation services. In order to improve the current situation it is vital that all HCPs receive training in brief interventions. Further to the Health Service Executive training currently being delivered to qualified staff, it would be beneficial to also target healthcare students by integrating smoking cessation training into post-graduate curriculums. In addition to training all HCPs in brief interventions some need to receive further training and become specialists in smoking cessation.

All HCPs in Ireland should, at a minimum, be able to refer patients to a specialist smoking cessation service. In order to enable this both the resources themselves and HCP awareness of same need to be in place.

In order to improve the current situation in Ireland a multi-pronged attack incorporating basic competency across the board, specialist services and resources, and

awareness of specialist service and resources is required.

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**CONFLICT OF INTEREST**

All the authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

**FUNDING**

Study funded by the RCDH Trust which is gratefully acknowledged.

**ETHICS COMMITTEE APPROVAL**

Local research ethics committee approval for this survey was granted by the Dublin Institute of Technology Research Ethics Committee.

**PROVENANCE AND PEER REVIEW**

Not commissioned; externally peer reviewed.