The psychological and clinical impact of the COVID-19 pandemic on orthopaedic patients: An Italian gender-specific analysis

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Abstract

This observational study aims to assess the impact of the COVID-19 pandemic on orthopaedic patients' psychology and clinical management, focusing on gender differences in the following items: (1) pain perception and therapeutic compliance during the pandemic, compared with the pre-pandemic period; (2) relationship doctor-patient (considering both general practitioners and orthopaedic surgeons); (3) patient referral to Orthopaedic emergency room.

An *Ad Hoc* online questionnaire was developed and administered to patients referring to Orthopaedic emergency departments and Orthopaedic outpatient departments throughout Italy, between March and April 2020. The patients' psychological status during the pandemic was evaluated, mainly focusing on the following aspects, *i.e.,* the fear of contracting the COVID-19 infection, the perceived risk of COVID-19 contagion and the compliance with the COVID-19 restrictions. Differences between genders were also assessed.

782 patients finally took part in the present study. A significant decrease of general practitioner and Orthopaedic surgeon clinical referral was recorded during the lockdown period, compared with pre-COVID period ($p<0.001$; $p=0.031$). Nonetheless, the number of phone calls to the general practitioner did not undergo substantial differences ($p=0.093$), compared to patients' the phone consult with orthopaedic surgeons ($p=0.042$). A significant correlation was found between the fear of COVID-19 contagion the perceived risk of contracting the infection ($p<0.001$).

The COVID pandemic significantly impacted on orthopaedic patients' psychology and perception of the disease. During the lockdown, patients gave a higher priority to the pandemic event and significantly reduced the treatment of their orthopaedic disease.

Introduction

At the beginning of 2020, after an initial spread in China, a new infectious disease known as Coronavirus disease (COVID-19) has rapidly spread in different countries. On March 11th, 2020, the World Health Organization (WHO) has subsequently declared the COVID-19 outbreak a global pandemic.[1] Because of the rapid COVID-19 spreading, several countries established rigorous restrictions.[2]

In Italy, the first autochthonous case of COVID-19 was diagnosed on February 20th in Codogno (Lodi, Lombardy), but the virus spread exponentially in Northern Italy in a few weeks. Hence, on March 9th, 2020, the Italian government released a decree aiming to prohibit travels and movement in public places, except for justifiable work reasons: the whole country was on lockdown. The subsequent period of self-isolation markedly changed our social and working life: people have been unable to meet their relatives and/o friends for several weeks and could go out only for compelling needs. Moreover, the low availability of face masks and personal safety devices worsened healthcare professional activities.

In this context, the fear of COVID-19 contagion, together with restrictive law forced and social isolation might critically impact on people mental status.

Previous studies have reported the Severe Acute Respiratory Syndrome (SARS) epidemic and the H1N1 flu significantly impacted on people mental status.[3-6] Therefore, during the SARS outbreak, several studies investigated the psychological impact of the disease on the non-infected community.[7,8] Older age, female gender and higher education were related to a higher fear of SARS contagion. Moreover, patients with SARS-like symptoms were more likely to take precautionary measures against the infection.[9,10]

Currently, there is little information about the general population's mental health, during the COVID-19 epidemic. Great efforts were made in identifying the epidemiologic and clinical features of infected patients,[11,12] the genomic characterization of the virus and global health governance-related matters.[13,14] This observational study aims to assess the impact of the COVID-19 pandemic on orthopaedic patients psychology, focusing on gender differences: (1) in pain perception and therapeutic compliance during the pandemic, compared with the pre-pandemic period; (2) the relationship doctor-patient (considering both general practitioners and orthopaedic surgeons); (3) inpatient referral to Orthopaedic emergency room.

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Key words: Covid-19 perception; general well-being; orthopaedic patients; gender; pandemic.

Contributions: All the authors made a substantial intellectual contribution. All the authors have read and approved the final version of the manuscript and agreed to be accountable for all the aspects of the work.

Conflict of interest: The authors declare that they have no conflict of interests.

Funding: None

Ethics approval: Ethical clearance was obtained from our Centre's clinical research ethics (code: 6475).

Consent to participate: All the patients provided written informed consent to participate.

Received for publication: 6 November 2020.
Accepted for publication: 29 November 2020.

Orthopedic Reviews 2021; 13:9005
doi:10.4081/or.2021.9005

Materials and Methods

Study design and patient selection

A prospective multicentric observational study was performed. The study included all the orthopaedic patients referring to the Orthopaedic emergency departments and Orthopaedic outpatient departments involved in the study, throughout Italy.

All the patients received an invitation to

voluntary take part in the study. All the information collected had no diagnostic purposes and the results were treated confidentially, guaranteeing complete anonymity. Each patient completed an online form provided by the Orthopaedic surgeons involved in this multicenter study; all the data were subsequently gathered in a unique anonym database. The sampling strategy is summarized in Figure 1.

Questionnaire development and administration

An Ad Hoc questionnaire was developed and online administered. The first part of the questionnaire focused on general information, including gender, age group (divided into six different classes, namely: 18-25, 26-35, 36-50, 51-65, 65-70 and >70 years old) and the participants' living conditions (with/without cohabitants).

The second part focused on the orthopaedic disease (classified in osteoarthritis, spine pathologies, musculotendinous and/or ligamentous lesions, fractures and osteoporosis), physical activity level (assessed on a decimal scale, where 0 indicated the absence of physical activity and 10 the competitive physical activity level.

The third part examined the orthopaedic disease management and the patients' compliance in drugs assumption (*i.e.*, NSAIDs, opioids, paracetamol and osteoporotic drugs), comparing the pre-COVID period (November 2019-January 2020) to COVID lockdown period (March-April 2020). The Numeric Rating Scale (NRS) was used to assess the patient's pain intensity. Patients were also asked about the possibility to complete, during COVID lockdown, therapeutically cycles of intra-articular injections, shock waves therapy, ozone therapy and physio-kinesiotherapy, started in the pre-COVID period.

All the participants were asked about the possibility to receive, during COVID lockdown, a telematic or traditional consult from general practitioners and orthopaedic surgeons.

The number of orthopaedic emergency department referrals in pre-COVID period (November 2019-January 2020) was compared to that observed during COVID lockdown (March-April 2020).

Moreover, participants were asked to indicate how often they searched for medical information, related to their orthopaedic disease, on the net during the lockdown period.

In the last part of the questionnaire, we investigated the mental status of all the participants, by using the General Well Being scale (GWB)[15] and Likert scale.

Finally, the participants were asked about the degree of information on the COVID pandemic, the compliance to the restrictions imposed by the Italian government, the fear of contracting the SARS-CoV-2 infection (assessed on a decimal scale) and the risk perception the COVID-19 contraction.

Statistical analysis

Statistical analysis was performed using SPSS (version 20; IBM Corp, Armonk, NY). Descriptive statistics were used to evaluate the sample demographic characteristics. The Chi-square test and Fisher's exact test were used to assess the variability between groups. Spearman correlation test was used to depict any relationship between the different psychological factors analyzed in the questionnaire. The tests were two-tailed; statistical significance was set at $p<0.05$.

Results

In the present study, 1000 orthopaedic patients were invited to answer the on-line questionnaire and 782 (78.2%) accepted to take part in the study. As shown in Figure 1, 360 participants out of 782 (46%) were women, 197 out of 782 (25.19%) suffered from osteoarthritis, 225 out of 782 (28.77%) complained spine pathologies, 129 out of 782 (16.50%) referred with musculotendinous or ligamentous injuries, 130 out of 782 (16.62%) had a post-traumatic disease and 101 out of 782 (12.92%) were affected by osteoporosis. The most represented age categories were 36-50 y.o. (38.39%) and age 51-67 y.o. (48.97%) (Table 1). The male participants were significantly older than female ($p=0.035$) and a higher number of male participants lived alone, before the pandemic, compared with female participants $p=0.031$).

Table 2 shows gender differences in the pre-COVID period, during the lockdown and between the two periods.

No significant differences between genders were observed in each period and between the two pre-COVID and lockdown period. Drugs assumption during lockdown showed significantly different between genders ($p=0.026$), since men revealed less compliant than women. Several items showed a significant change ($p<0.001$) during the lockdown, compared with pre-COVID period (Table 2).

Considering pain perception, patients reported a lower perception during the lockdown, compared with the pre-COVID period. Furthermore, the compliance in drugs assumption was also significantly different in the two periods ($p<0.001$): during the COVID lockdown a significant reduction of drugs assumption was recorded.

Clinical/telematic referral to general practitioners was significantly different in the two periods ($p<0.001$), but no signifi-

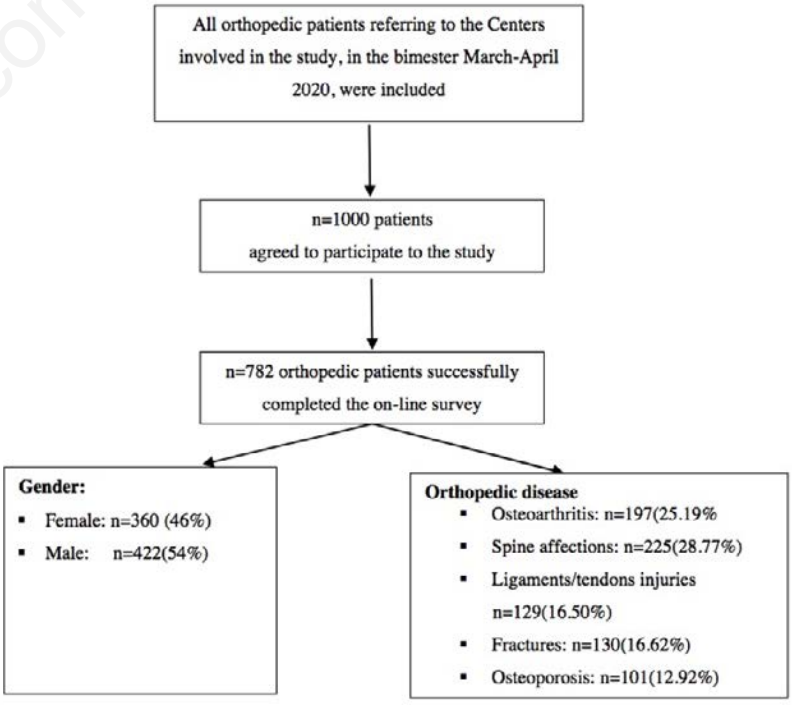

Figure 1. The sampling strategy adopted in this study.

cant differences between genders were observed in both periods. The same trend was observed in clinical/telematic referral to orthopaedic surgeons (p=0.031), in the absence of gender differences in both periods (p=0.549; p=0.993).

No significant differences were observed in terms of accesses to the orthopaedic emergency room in lockdown period compared with pre-COVID period (p=0.475).

Surprisingly, a significant number of patients declared they have not searched on the net info about their orthopaedic disease (p=0.028): COVID-19 pandemic shifted patients' attention from their disease to the pandemic.

Concerning patients' mental status during the COVID-19 lockdown (Table 3), 222 female (28.39%) and 263 male (33.63%) respondents recorded good psychological well-being; 126 female (16.11%) and 146 male (18.67%) participants showed a psychological condition worthy of specialistic evaluation and 12 (1.53%) female and 13 (1.66%) male participants needed a specialistic referral. Differences between gender were not statistically different (p=0.418).

Focusing on the participants' information status about the Covid-19 spreading, 215 women (27.49%) and 224 men (16.37%) declared they felt updated about the topic, whereas 135 women (17.26%) and 187 men (11.38%) considered themselves very updated on the pandemic.

Concerning the fear of contracting the SARS-CoV-2 infection, 264 women (33.76%) and 304 men (38.87%) affirmed they had a medium-high level of fear. No differences between genders were found (p=0.139). Moreover, 355 women (45.40%) and 411 men (52.56%) affirmed they adopted all the measures to reduce the risk of SARS-CoV-2 infection. No differences between genders were depicted (p=0.218).

Table 4 shows the correlation between gender and the analyzed psychological items, *i.e.*, the psychological well-being, self-perception of the SARS-CoV-2 infection knowledge, the compliance with the restrictive rules, the fear of contracting the infection and the perceived risk of the infection contraction. The results highlight a significant correlation between the participants perceived fear and the perceived risk of SARS-CoV-2 contraction (p<0.001).

Discussion

This study has focused on the orthopaedic patients' psychological status and the management of their disease during COVID-19 lockdown, compared with the pre-COVID period. In the current literature, to the authors' knowledge, no available studies are dealing with these topics.

Some published papers have only focused on some aspects analyzed in the present study.[16-18] Qiu *et al.*[16] have encouraged social distancing rules and have assessed the most important non-pharmacological interventions to combat the SARS-CoV-2 virus. Particularly, they found lockdown measures and home staying behavior significantly decreased the virus transmission rates.

In the present study, we have not analyzed the effectiveness of these rules, but we have focused on the patient's point of view. We observed 355 women (45.40%) and 411 men (52.56%) affirmed that they paid attention to the adoption of all measures to reduce the risk of SARS-CoV-2 infection.

Concerning the perceived risk to contract the COVID-19 infection, Abrams *et al.*[17] have emphasized the role of risk communication during the COVID pandemic. Therefore, the fear of contracting the COVID-19 disease is as real as the physical danger itself. The present study highlighted there are some aspects of the pandemics that can heighten the risk perception, *i.e.,* the so-called dread factors, that largely

Table 1. Sample characteristics (n=782),

Characteristics	Female n (%)	Male n (%)	p-value
Age			0.035*
18-25 years	12 (1.53)	10 (1.28)	
26-35 years	36 (4.60)	22 (2.81)	
36-50 years	88 (11.25)	124 (15.86)	
51-65 years	181 (23.14)	202 (25.83)	
65-70 years	34 (4.34)	43 (5.50)	
Over 70 years	9 (1.15)	21 (2.68)	
Living alone or with …:			0.031*
Alone	77 (9.84)	96 (12.27)	
With 1 or more roommates	65 (8.31)	46 (5.88)	
With wife or husband	76 (9.72)	108 (13.81)	
With wife/husband and children	142 (18.16)	172 (22.00)	
Physical activity level:			0.001*
0: Illness or disability pension	9 (1.15)	4 (0.51)	
1: Sedentary work	102 (13.04)	97 (12.40)	
2: Lightwork or walks on uneven ground but impossible excursions	53 (6.77)	52 (6.65)	
3: Light jobs	69 (8.82)	62 (7.93)	
4: Moderately heavy work	28 (3.58)	28 (38.88)	
5: Heavy work, competitive sport-cycling, cross-country skiing, recreational sport, jogging on uneven ground at least 2 times a week	49 (6.26)	69 (8.82)	
6: Recreational sport, tennis and badminton, handball, racquetball, skiing (downhill), jogging at least 5 times a week	35 (4.47)	61 (84.72)	
7: Competitive sport-tennis, running, handball, recreational sport, soccer, football, rugby, ice hockey, basketball, squash, racquetball, running	10 (1.28)	31 (3.96)	
8: Competitive sport, racquetball, bandy, squash or badminton, athletics, skiing (downhill)	0 (0)	4 (0.51)	
9: Competitive sport, soccer, football, rugby (lower leagues), ice hockey, wrestling, gymnastics, basketball	5 (0.64)	10 (1.28)	
10: National competitive sport, soccer, football, rugby	0 (0)	4 (0.51)	

*p<0.05 is statistically significant.

Table 2. How orthopaedic patients change their therapeutic habits between before Covid-19 pandemic and during Covid-19 pandemic periods (n=782).

Items	Before Covid-19 pandemic			During Covid-19 pandemic			p-value***
	Female n (%)	Male n (%)	p-value**	Female n (%)	Male n (%)	p-value**	
Pain perception			p=0.178			p=0.152	p<0.001*
Value 0: No harm	75 (9.59)	110 (14.07)		66 (8.43)	70 (8.95)		
Value 2: A little bad	154 (19.69)	142 (18.16)		191 (24.42)	197 (25.19)		
Value 4: A little worse	66 (8.44)	89 (11.38)		60 (7.67)	95 (12.15)		
Value 6: Even worse	43 (5.50)	52 (6.65)		21 (2.68)	29 (3.71)		
Value 8: Much worse	17 (2.17)	21 (2.68)		19 (2.43)	30 (3.83)		
Value 10: The worst possible pain	5 (0.64)	8 (1.02)		3 (0.38)	1 (0.13)		
Therapy assumption			p=0.355			p=0.964	p<0.001*
None	161 (20.59)	176 (22.51)		234 (29.92)	281 (35.93)		
2-3 times in the period	18 (2.30)	34 (4.35)		48 (6.14)	52 (6.65)		
1 time per week	135 (17.26)	156 (19.95)		42 (5.37)	47 (6.01)		
More than 2 times a week	46 (5.88)	56 (7.16)		36 (4.60)	42 (5.37)		
Anti-inflammatory therapy			p=0.725			p=1.000	p<0.001*
Yes	73 (9.33)	90 (11.51)		52 (6.65)	61 (7.80)		
No	287 (36.70)	332 (42.25)		308 (39.39)	361 (46.16)		
Opioid therapy			p=0.435			p=0.561	p<0.001*
Yes	5 (0.64)	10 (1.28)		4 (0.51)	8 (1.02)		
No	355 (43.40)	412 (52.68)		356 (45.52)	414 (52.94)		
Paracetamol therapy			p=0.710			p=0.828	p<0.001*
Yes	35 (4.47)	37 (4.73)		30 (3.83)	37 (4.73)		
No	325 (41.56)	385 (49.23)		330 (38.36)	385 (49.23)		
Recalcifying therapy			p=0.485			p=0.108	p<0.001*
Yes	28 (3.58)	27 (3.45)		20 (2.56)	13 (1.66)		
No	332 (42.45)	395 (50.51)		340 (43.48)	409 (52.30)		
Intra-articular infiltrations			p=0.415			p=0.692	p<0.001*
Yes	9 (1.51)	15 (1.92)		2 (0.26)	4 (0.51)		
No	351 (44.88)	407 (52.05)		358 (45.78)	418 (53.45)		
Shock waves			p=0.740			p=0.666	p<0.001*
Yes	5 (0.64)	4 (0.51)		3 (0.38)	2 (0.26)		
No	355 (45.40)	418 (53.45)		357 (45.65)	420 (53.71)		
Ozone therapy			p=1.000			p= <0.001*	p=<0.001*
Yes	2 (0.26)	2 (0.26)		0 (0)	0 (0)		
No	358 (45.78)	420 (53.71)		360 (46.03)	422 (53.96)		
Physio-kinesitherapy			p=0.572			p=0.489	p<0.001*
Yes	15 (1.92)	14 (1.79)		7 (0.89)	12 (1.53)		
No	345 (44.12)	408 (52.17)		353 (45.14)	410 (52.43)		
No therapy			p=0.384			p=0.026*	p<0.001*
Yes	213 (27.24)	236 (30.18)		211 (26.98)	213 (21.61)		
No	147 (18.80)	186 (23.79)		149 (19.05)	209 (26.73)		
How many times patients went to the general practitioners?			p=0.204			p=0.119	p<0.001*
Never	231 (29.54)	245 (31.33)		232 (29.67)	251 (32.10)		
2-3 times in 3 months	82 (10.49)	112 (14.32)		82 (10.49)	93 (11.89)		
1 time per week	38 (4.85)	58 (7.41)		31 (3.96)	59 (7.54)		
More than 2 times a week	9 (1.15)	7 (0.89)		15 (1.92)	19 (2.43)		
How many times patients phoned their general practitioners?							
Never	219 (28)	245 (31.33)	p=0.758	235 (30.05)	277 (35.42)	p=0.993	p=0.093
2-3 times in 3 months	122 (15.60)	158 (20.20)		110 (14.07)	126 (16.11)		
1 time per week	15 (1.92)	15 (1.92)		12 (1.53)	15 (1.92)		
More than 2 times a week	4 (0.51)	4 (0.51)		3 (0.38)	4 (0.51)		
How many times patients went to the orthopaedic specialists?			p=0.549			p=0.253	p=0.031*
Never	304 (38.87)	348 (44.50)		317 (40.54)	359 (45.91)		
2-3 times in 3 months	42 (5.37)	48 (6.14)		34 (4.35)	55 (7.03)		
1 time per week	9 (1.15)	17 (2.17)		9 (1.15)	8 (1.02)		
More than 2 times a week	5 (0.64)	9 (1.15)		0 (0)	0 (0)		
How many times patients phoned their orthopaedic specialists?			p=0.201			p=0.107	p=0.042*
Never	282 (36.06)	305 (39)		225 (28.77)	279 (35.67)		
2-3 times in 3 months	57 (7.29)	91 (11.64)		45 (5.75)	63 (8.06)		
1 time per week	9 (1.15)	13 (1.66)		90 (11.51)	80 (10.23)		
More than 2 times a week	12 (1.53)	13 (1.66)		0 (0)	0 (0)		
How many times did the patients referred to the emergency dept?			p=0.429			p=0.104	p=0.475
Never	352 (45.01)	416 (53.20)		356 (45.52)	408 (52.17)		
2-3 times in 3 months	8 (1.02)	6 (0.77)		3 (0.38)	11 (1.41)		
1 time per week	0 (0)	0 (0)		1 (0.13)	3 (0.38)		
More than 2 times a week	0 (0)	0 (0)		0 (0)	0 (0)		
How often do you look for information regarding your condition?			p=0.387			p=0.746	p=0.028*
Never	115 (14.71)	145 (18.54)		181 (23.14)	196 (25.06)		
Rarely	139 (17.77)	137 (17.52)		72 (9.21)	96 (12.28)		
Occasionally	63 (8.06)	89 (11.38)		50 (6.40)	61 (7.80)		
Often	19 (2.43)	26 (3.32)		32 (4.09)	34 (4.35)		
Always	24 (3.07)	25 (3.20)		25 (3.20)	35 (4.47)		

*p<0.05 is statistically significant. **x2 test between Female and Male participants before the pandemic and between Female and Male subjects during the pandemic. ***x^2 test between total participants between before and during the Covid-19 pandemic.

apply to the current pandemic. These factors include high infection rates, the COVID significant morbidity and mortality, the low availability of face masks and personal safety devices, the lack of therapeutic measures and the rapid virus spread.

These factors could underestimate the perception of risk among the general population and, at the same time, they could also underestimate the importance of compliance with the restriction rules. Our data confirm the findings reported by Abrams et al., since the vast majority (71.22%) of participants, in absence of gender differences (p=0.082), reported a quite high contagion perception risk.

Furthermore, Abrams *et al.* have also emphasized that daily headlines generate widespread fear and panic and the World Health Organization (WHO) reported a significant part of effective communication risk includes the identification and management of rumors and misinformation. In this context, our data support the reported by

Table 3. The general well-being of orthopaedic patients and their perceptions on the Covid-19 pandemic health emergency among Female and Male participants (n=782).

Parameter	Female n (%)	Male n (%)	p value
General well-being scores:			p=0.418
Score 0-14: At the moment, it seems that you have no psychological problem	222 (28.39)	263 (33.63)	
Score 15-19: There is something wrong. You may find it helpful to ask for advice	126 (16.11)	146 (18.67)	
Score >20: You need to go to a specialist	12 (1.53)	13 (1.66)	
Perception of one's level of information on the Covid-19 pandemic:			p=0.148
Shortly	1 (0.13)	1 (0.13)	
Not much	4 (0.51)	1 (0.13)	
In the norm	5 (0.64)	9 (1.41)	
Very	215 (27.49)	224 (16.37)	
Very much	135 (17.26)	187 (11.38)	
Are you sticking to government restrictions to tackle the spread of the pandemic?			p=0.218
Shortly	4 (0.52)	4 (0.52)	
Not always	1 (0.13)	7 (0.89)	
Often	318 (40.66)	367 (46.55)	
Closely	37 (4.73)	47 (6.01)	
How are you afraid of getting SARS-CoV-2 infection? Indicate a value from 1 to 10 where 1 means "no fear" and 10 means "I'm terrified"			p=0.139
alue 1	15 (1.92)	18 (2.30)	
Value 2	33 (4.22)	34 (4.35)	
Value 3	21 (2.68)	40 (5.11)	
Value 4	27 (3.45)	24 (3.07)	
Value 5	46 (5.88)	57 (7.29)	
Value 6	28 (3.58)	43 (5.50)	
Value 7	40 (5.12)	52 (6.65)	
Value 8	77 (9.85)	98 (12.53)	
Value 9	26 (3.32)	24 (3.07)	
Value 10	47 (6.01)	30 (3.83)	
Based on the precautions you are taking, what do you think might be the urge to contract SARS-CoV-2 infection? Indicate a value from 1 to 5 where 1 means "no risk" and 5 means "absolute risk"			p=0.082
Value 1	49 (6.26)	64 (8.18)	
Value 2	164 (20.97)	163 (20.84)	
Value 3	102 (13.04)	128 (16.37)	
Value 4	24 (3.07)	48 (6.14)	
Value 5	21 (2.68)	19 (2.43)	

*x^2 test, p value<0.05: statistically significant.

Table 4. Relationships between general well-being, degree of information, compliance with the rules, fear of contracting the infection, perception of the risk to contract the infection.

Variables	General Well Being score during the Covid-19 health emergency, p-value	Degree of information on the Covid-19, p-value	Compliance with the rules to reduce the Covid-19 diffusion, p-value	Fear of contracting Covid-19 infection, p-value	Perception of the risk of contracting Covid-19 infection, p-value	Gender (Female + Male), p-value
General Well Being score during the Covid-19 health emergency	-	0.389	0.546	0.749	0.534	0.767
Degree of information on the Covid-19	0.389	-	0.828	0.217	0.580	0.061
Compliance with the rules to reduce the Covid-19 diffusion	0.546	0.828	-	0.113	0.874	0.243
Fear of contracting Covid-19 infection	0.749	0.217	0.113	-	0.0001*	0.116
Perception of the risk of contracting Covid-19 infection	0.534	0.580	0.874	0.0001*	-	0.301
Gender (Female + Male)	0.767	0.061	0.243	0.116	0.301	-

*Correlation is significant at the 0.001 level.

Abrams *et al.,* since 304 women (38.87%) and 264 men (33.76%) affirmed they had a medium-high level of fear to contract the infection. This finding has probably promoted the respect of the limitations imposed by the Italian government: 355 women (45.40%) and 411 men (52.56%) affirmed they paid attention in adopting all the measures needed to reduce the risk of SARS-CoV-2 infection.

Jungmann *et al.,*[18] moreover, highlighted health anxiety and cyberchondria has increased the SARS-CoV-2 anxiety. In our study, we administered the GWB scale, to investigate not only anxiety but also the psychological well-being of participants: In our study, 62.02% of participants showed good psychological well-being, 34.78% of participants revealed a psychological condition needing a specialist referral and only 3.19% of participants needed a psychologist referral.

Moreover, Jungmann *et al*. observed anxiety is negatively related to the degree of information about the pandemic status. Our data agree with this finding, since the participants' psychological level is good as well as the perception that the participants have of their level of information on the pandemic condition.

The present study also focuses on the clinical/telematic referral to general practitioners and orthopaedic surgeon. In the current literature, there are no data concerning drugs assumption during the lockdown, compared with the pre-COVID period.

Surprisingly, our study showed that, during the Covid-19 lockdown, pain perception was statistically reduced than in pre-COVID period ($p<0.001$), without any gender difference ($p=0.178$ before lockdown; $p=0.152$ during lockdown).

Moreover, the number of patients no longer assuming their daily therapy increased significantly during the COVID lockdown ($p<0.001$), in both genders (anti-inflammatory drugs, opioids paracetamol, osteoporotic drugs).

It is interesting to note during the lockdown period orthopaedic patients referred less to orthopaedic specialists than to their general practitioners; in fact, patients that referred to their general practitioner more frequently ($p<0.001$) than their orthopedists ($p=0.031$).

Since the pandemic has not yet resolved, our epidemiological should be critically reconsidered when the phenomenon will be exhausted.

Conclusions

This study summarizes the life-style changes observed during COVID lockdown. Orthopaedic patients, therefore, focused more on the COVID-19 evolution than on their orthopaedic disease.

In this context, the reduction of therapies performed by orthopaedic surgeons could be explained by the forced stop of the elective surgery and visits, observed during the first phase of restrictions imposed by the Italian Government.

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