Fear of contamination among older adults in the post-COVID-19 era

Eman Alhalal, RN, MScN, PhD[a],[*], Zainab Alkhair, RN, MScN[b], Fatimah Alghazal, RN, MScN[c], Fatema Muhaimeed, RN, MScN, CPHQ[d], Rehab Halabi, RN, MScN[e]

[a] Community and Mental Health Nursing Department, Nursing College, King Saud University, Saudi Arabia
[b] Qatif Health Centers Administration, Qatif Health Network, Saudi Arabia
[c] Maternity and Children Hospital, Al-Ahsa, Saudi Arabia
[d] Hematology/ Oncology unit, King Saud Medical City, Saudi Arabia
[e] The Administration of School Health Affairs, Makkah Health Care Cluster, Saudi Arabia

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ABSTRACT

This study assesses older adults' fear of contamination in the post-coronavirus disease 2019 (COVID-19) era, examining the factors associated with this fear and investigating its effects on their well-being and use of primary healthcare, considering the moderating effects of activities of daily living (ADL) and multimorbidity in these two relationships. A cross-sectional study was conducted in primary healthcare centers in three regions in Saudi Arabia with a convenience sample of 444 older adults diagnosed with chronic diseases. The results indicated that 77.9% of older adults had high contamination fear, predicted by their age, education level, gender, ADL, and previous COVID-19 infection experience. Subjective well-being and the number of primary healthcare visits in the post-COVID-19 era were negatively affected by contamination fear and both ADL and multimorbidity moderated these relationships. In conclusion, the study confirmed the need to focus on older adults' contamination fear to mitigate its negative effects on well-being and critical primary healthcare visits.

Introduction

In 2020, the World Health Organization (WHO) announced coronavirus disease 2019 (COVID-19) as a pandemic.[1] Various countries, such as China,[2] and Saudi Arabia,[3] implemented the recommended WHO measures, involving population screening, wearing masks, social distancing, avoiding crowds, self-isolation, frequent hand washing, and travel restrictions, to control the spread of the virus,[4] while some countries, such as Vietnam and Uganda, did not implement any of these measures.[5] As regards cultural differences, some measures, for instance wearing face mask in public, were strictly adopted in Asian countries, while western countries debated for months.[6] As is evidenced, COVID-19 was better contained in countries with strict public health measures during the outbreak[5]. In response to this pandemic, a global COVID-19 vaccination movement took place, which started in December 2020 and has saved approximately 19.8 million lives.[7] Despite that, merely 57 countries have reached 70% in vaccinating their population.[8]

By May 2022, over 500 million confirmed cases and over 6 million deaths have occurred worldwide.[9] In addition to the real risks of illness and death, psychological outcomes, such as anxiety, depression,[10] and obsessive−compulsive disorders,[11] have continued in post-COVID-19 era. Fear, a negative emotion that is generated by perceptions of threat and uncertainty,[12] is the most reported response associated with the pandemic.[13] A meta-analysis estimated that 41% of international communities experience general fear related to COVID-19, which is higher in Asian countries than other countries. Given the easy transmissibility, novelty, and behavioral responses related to coronavirus, fear of contamination—a continuous strong feeling of being contaminated, polluted, or infected from having physical contact with unseen items by touching anything[14],[15]—is proposed to be elevated.[16],[17] Contamination fear has been identified as a reliable predictor of safety behaviors in response to COVID-19 among students[18] and number of visits to shops, restaurants, and markets among general population,[19] and it is predicted by gender, health status (medical vulnerability), having tested positive for COVID-19, and psychological conditions.[17]

In almost every country, the number of people over 60 is rising tremendously[20]; thus, special attention must be focused on the health of this population. Older people are more vulnerable to COVID-19, as they are at a higher risk of contracting severe illness from it.[21] They have constituted 80% of hospitalized cases related to COVID-19,[22] and the fatality rate from COVID-19 is considerably high among older adults.[23] As a result of COVID-19, older adults' life expectancy has decreased and the risk of living with disability has

*Corresponding author.
    E-mail address: ealhalal@ksu.edu.sa (E. Alhalal).

increased.[24] Healthcare providers have observed the negative effects of the pandemic on various aspects of older adults' lives.[25] Recommendations for older adults at the global level that include avoiding contact with other people,[26] media coverage regarding older adults' death rates, distressing stories related to COVID-19,[27] and extreme safety precautions,[28] could foment the fear of physical contact and contracting infection among older adults.[29] This suggests that fear of contamination is higher among older adults.[19,28] While realistic fear related to the pandemic is preferable, as with facing any real threat, excessive fear is a maladaptive response, which could have undesirable effects.[30] Although general fear related to COVID-19 among older adults has been examined in different countries,[31−33] fear of contamination, which is associated to higher compliance with safety measures through contamination awareness, requires attention. Contamination fear could create a vicious circle as people become afraid and distressed, resulting in poor well-being, which can generate additional health challenges. Subsequently, examining the extent older adults' fear of contamination related to COVID-19 and its relevant predictors is crucial. Research investigating the factors that predict older adults' fear of contamination related to COVID-19 is lacking. Among different populations, such as students,[17,34] men usually hold lower contamination fear in comparison with women. In adult sample from Chile, age, chronic illnesses, and education level significantly predict contamination fear.[35] Being infected or suspected also predict general fear related to COVID-19. Yet, substantial understanding of the predictors of contamination fear among older adults is needed for healthcare providers to focus on their perceptions of COVID-19−related contamination and explore effective approaches to minimize it.

Older adults' non-COVID-19 care has recently been emphasized.[36] Older adults with chronic diseases require regular visits to primary healthcare centers. In addition, embracing well-being among older adults is a huge concern because positive aging and coping with life events require psychological well-being.[37] Fear of contamination could affect older adults' use of medical facilities and mental health outlook.[36] Lack of medical care use among older adults may exacerbate the complexity of chronic health conditions and lead to mortality in relation to manageable and preventable healthcare issues.[38] However, an understanding specifically of the effects of fear of contamination among older adults remains lack. This knowledge is critical for strategic policymaking through any future waves of COVID-19. Only one study in Hungary found that COVID-19− related contamination fear influences older adults' emotion regulation strategies, which affects their mental health.[39] It is possible that the effect of contamination fear on older adults' well-being and regular use of primary healthcare could depend on multimorbidity and functional competency (i.e., activities of daily living [ADL]). Multimorbidity shapes older adults' psychological condition and health system usage. Suffering from multiple chronic diseases raises the probability of mental health challenges.[40] and increased healthcare system visits,[41] as each additional chronic disease is associated with additional consultation visits.[42] The physiological changes of the aging process lead to limitations in mobility and functional capacity, for instance decline in performing ADL such as feeding, bathing, and dressing independently, which may affect older adults' mental health outcomes[43] and regular use of primary healthcare.[41] Decrease in well-being and primary healthcare visits associated with contamination fear could lead to reduced physical functioning and increased multimorbidity among older adults. Thus, the impact of older adults' contamination fear should be understood in the relation to ADL levels and multimorbidity. Such evidence is crucial for healthcare providers, including nurses and decision-makers, to meaningfully address the effects of contamination fear considering these factors.

While contamination fear among older adults has been examined in very few contexts,[31−33] existing studies might not be generalizable to different national and cultural contexts, such as Middle East countries. In general, fear is a subjective and individualized experience[44] that is relevant to social context[45]; thus, such phenomena should be understood in its context. Saudi Arabia is one of the countries considered to be doing well in managing the pandemic.[46] Nevertheless, as of May 2022, over 700 thousand confirmed cases and over 9 thousand deaths have occurred.[47] Although one study found that Saudi older adults have lower stress in comparison with young people,[48] there is no information regarding contamination fear among older adults in the post-COVID-19 era and its impacts. To address this need, this study examines a) older adults' fear of contamination related to COVID-19, b) the factors associated with contamination fear, and c) the effects of contamination fear on older adults' well-being and use of primary healthcare, considering the moderating effect of ADL and multimorbidity in these two relationships. Based on prior research, the following hypotheses were proposed: 1) age, gender, education level, multimorbidity, ADL, and having contracted COVID-19 are factors associated with contamination fear; 2) contamination fear negatively affects well-being and both ADL and multimorbidity moderate this association; 3) contamination fear negatively affects the number of primary healthcare visits and both ADL and multimorbidity moderate this association.

Methods

Study design and participants

A cross-sectional study was conducted by recruiting a convenience sample of 444 older adults aged 60 years and above from 25 primary healthcare centers in three regions in Saudi Arabia. The researchers approached potential participants visiting centers for any reason, briefly explained the study, and assessed them for eligibility. Eligibility criteria included age 60 and above, Arabic speaking, and diagnosis with any chronic disease for at least 12 months. A total of 584 older adults met the eligibility criteria, and 444 agreed to participate with a response rate of 76%. Sample size was estimated based on correlation using G power software with a medium effect size of 0.3, a power level of 0.95, and a significance level of 0.05. A minimum of 138 participants is the required sample size for representativeness.

Data collection

Data were collected between December 2021 and April 2022. This period was chosen considering the increase in confirmed cases in Saudi Arabia.[47] Data were collected using structured interviews in a private room in a primary healthcare center. The researchers were registered nurses trained to work with older adults. Prior to data collection, informed consent was read and explained to each participant, who were then asked to sign or provide thumb print acknowledging consent. Interviews lasted 10−15 minutes and occurred while respondents were waiting for medical appointments.

Measures

Participants were asked about their characteristics; namely, age, education level, financial status, marital status, family members that they reside with, having previously contracted COVID-19, having received COVID-19 vaccines, and the chronic health conditions diagnosed. They were also asked to rate their overall general health. A 5-point Likert scale was used to capture respondents' perceptions from 1 *very poor* to 5 *excellent*. All questions were presented in Arabic.

Contamination fear

The Padua Inventory contamination behavior subscale[49] was used, comprising 10 items to assess contamination obsessions and

washing compulsions. These items were rated on a 5-point Likert scale (1 = not at all, 5 = very much) wherein a higher score indicates elevated contamination fear. This subscale was shown to have good internal consistency with Cronbach's alpha (=.85) and test−retest reliability (=.72).[49] A score of≥ 14 is considered the threshold for high contamination fear.[18],[50] The total score ranges from 10 to 50. This subscale has been used with older adults[39,51] in assessing fear of contamination related to COVID-19 and validated to have reliable internal consistency.[39,52] We adapted and translated this subscale into Arabic applying the steps of the integrated standardized method.[53] First, five bilingual experts with healthcare backgrounds and familiarity with the culture assessed the content validity of the selected scale, reading and rating each item in terms of relevance and clarity on a 10-point Likert scale. The five experts' ratings were all above 5 for both comprehension and relevance to Arab culture. Forward translation from English to Arabic was then performed by certified translators with healthcare backgrounds. Backward translation was not conducted, as it is considered inessential in the selected method.[53] The final Arabic version was pilot tested with 30 older adults (60 years and above) visiting one primary healthcare center in the Al-Ahsa region for chronic health conditions. The reliability (internal consistency) for the subscale was assessed, with a Cronbach's alpha above .7; thus, the instrument was used in the main study. In our current study, the Cronbach's alpha for internal consistency was .91.

Subjective well-being

The 5-item World Health Organization well-being index (WHO-5) was used.[54] This scale is proposed to assess current mental well-being among primary healthcare patients.[55] The scale covers aspects of positive mood, interests, and energy. It includes five items that are positively worded. Each item is rated on a 5-point Likert scale (0 = none of the time; 5 = all of the time). The total score ranges from 0 to 25, with lower scores indicating the absence of well-being and higher scores indicating the best possible well-being. It is widely used and is cross-culturally validated,[56,57] particularly among older adults.[58,59] The WHO-5 was previously translated to Arabic and used in studies with Arab older adults.[60] In this study, it has good evidence of reliability, as Cronbach's alpha was .96.

Primary healthcare usage

Participants were asked about the number of times they visited primary healthcare centers for any reason related to their chronic health condition during the past 12 months.

Multimorbidity

This construct is measured as the presence of two or more chronic health conditions. Participants were asked whether they had been diagnosed by their physician with any of a the listed chronic health issues (high blood pressure, diabetes, obesity, heart disease, epilepsy, stroke, cancer, arthritis, liver diseases, renal diseases, osteoporosis, and chronic respiratory diseases, such as chronic obstructive pulmonary disease and asthma), based on the WHO's[61] and the US Center for Disease Control and Prevention's lists of chronic diseases.[62] The participants were welcomed to indicate other conditions as well. All chronic conditions were added to elicit a multimorbidity variable with the total number of diagnosed diseases.

Functional status

The Katz ADL scale[63] was used to assess participants' functional competence, including bathing, dressing, toileting, transferring, feeding, and continence. Participants were asked to rate each of the six activities on a binary scale, in which 0 denotes total dependence and 1 denotes independence. A score of 6 indicates full function, 4 indicates moderate impairment, and 2 or less indicates severe functional impairment. This simple scale has excellent reliability and sensitivity to any change in health status.[64,65] The Arabic version was used, as it has produced good evidence of reliability, validity, and sensitivity.[66] In this study, the total score has excellent reliability, with a Cronbach's alpha of .95.

Ethical considerations

Ethical approval from the Ministry of Health Institutional Review Board and administrative approvals from each organization were obtained. Participants were informed about the purpose, voluntary nature of participation, anonymity, and confidentiality of the study.

Data analysis

IBM SPSS Statistics version 28 was used to conduct the statistical analyses. First, the resulting data were assessed in terms of missing elements, which ranged from 1.1% to 3.4%. Little's test[67] was then conducted, with a significant result (p <0.05), indicating that the missing data were not completely random, and missing data were conducted using expectation−maximization (EM).[68] Descriptive statistics were produced to describe the study sample and related variables. Correlation and an independent t-test were conducted to assess the bivariate associations between contamination fear and participants' background characteristics. To examine the first hypothesis, multiple linear regression analysis was conducted to simultaneously examine all factors predicting contamination fear. To examine the second and third hypotheses, we conducted moderation analyses using the SPSS PROCESS macro version 4 to test the effect of contamination fear on well-being and the use of primary healthcare, considering ADL and multimorbidity as moderators. This software calculates the interaction effect (moderation) and R^2 value (i.e., the proportion of the variance explained by the moderating effect) related to moderation and centers the predictors by transforming a variable into deviations around the grand mean. For the stability of estimating parameters, 5000 bootstrap random resamples were taken from the data.

Results

Descriptive statistics

Participants' background characteristics are presented in Table 1. Participants' average age was 68 years (SD = 5.8; range 60−94), most participants were women (60.1%; n = 267), and 64.4% (n = 286) were married. In terms of education level, 52.9% (n = 235) completed primary education, while only 3.6% (n = 16) had earned a university degree. Regarding income, 34.9% (n = 155) received between 0 and SR 2,500, and 35.6% (n = 158) received between SR 2,500 and 5,000. Most participants lived with spouses (60.6%; n = 269), whereas 23.2% (n = 103) lived in their children's homes. In terms of ADL, the mean was 1.8 (SD = 2.3; range 0−6). Regarding dependency on others, 22.5% (n = 100) reported full functioning, 68.9% (n = 306) reported dependency, and 38.1% (n = 169) indicated that they did not have the help they needed. Considering chronic diseases, 25.5% (n = 113) were diagnosed with one chronic disease, whereas 30.4% (n = 135) were diagnosed with four or more chronic diseases, for an average of 2.9 chronic diseases. (SD = 2.1; range 1−10). Respondents took an average 7.7 medications (SD = 2.3; range 0−14). In terms of COVID-19, 67.1% (n = 298) did not previously contract COVID-19, most (97.3%; n = 432) had received COVID-19 vaccines, and 57.7% (n = 256) reported their belief that the vaccine protected them from COVID-19.

In terms of contamination fear, the mean was 22.89 (SD = 9.44; range 10−50), with most participants (77.9%; n = 346) reporting high contamination fear based on the threshold score. The average well-

Table 1
Background characteristics of study participants ($n = 444$).

Characteristics	Frequency (n)	%
Gender		
Female	267	60.1
Male	176	39.6
Marital status		
Married	286	64.4
Divorced	12	2.7
Widow	139	31.3
Never married	7	1.6
Retirement income per month		
0−2500	155	34.9
2500−5000	158	35.6
5000−10,000	94	21.2
10,000−15,000	23	5.2
Above 15,000	12	2.7
Education		
Unable to read and write	151	34
Primary education	235	52.9
Secondary Education	34	7.7
Diploma	8	1.8
University/college degree	16	3.6
Living status		
Alone	60	13.5
Wife/husband	267	60.1
Sons/daughters	106	23.9
Extended family	11	2.5
Previously contracting COVID-19		
Yes	146	32.9
No	298	67.1
Receiving COVID-19 vaccines		
Yes	432	97.3
No	12	2.7
Perception related to COVID-19 vaccines		
Protection against COVID-19	256	57.7
Ineffective, but taken because mandatory	160	36
Characteristics	**Mean**	**Standard Deviation**
Age	68	5.8
Number of chronic diseases (multimorbidity)	3	2.01
Number of medications	4.7	2.3
Activities of daily living	1.78	2.35

being score was 14.53 (SD = 5.3; range 0−20) and respondents visited primary healthcare during the last 12 months 4.95 times on average (SD = 2.81; range 1−17) for their chronic diseases.

Factors associated with contamination fear

Fear of contamination correlated negatively with age (r [442] = -125, $p = .008$) but positively with education level (r [442] = .109, $p = .022$) and ADL (r [442] =.253, $p < .001$). Contamination fear did not correlate with multimorbidity (r [442] = -08, $p = .092$). The independent t-test revealed significant differences in the mean contamination fear between participants who had previously contracted COVID-19 (M = 20. 37) and those who had not (M = 24.12), t

(442) = 4.01, $p < .001$, indicating that those who were not previously infected had higher fear. No significant difference in the mean contamination fear was evident between male (M = 20.23) and female participants (M = 24.66), t (441) = -4.96, $p < .001$, with women exhibiting a higher fear of contamination.

Regression was conducted with contamination fear as an outcome variable, while age, gender, education level, multimorbidity, ADL, and having previously contracted COVID-19 served as independent variables (predictors). The analysis demonstrated that a linear combination of these factors explained 14% of the variance in contamination fear (F [6, 440] = 11.81, $p < .001$). Examining the specific factors, all except multimorbidity were found to be significant predictors. The results of regression analyses are presented in Table 2.

The effect of contamination fear on well-being and primary healthcare visits

We conducted regression analyses twice to examine the second and third hypotheses. First, we regressed the well-being variable on contamination fear and its interaction with ADL and multimorbidity. Second, we regressed primary healthcare visits on contamination fear and its interaction with ADL and multimorbidity. In the first analysis, the overall model explained 41.24% of the variance in well-being (F [5, 438] = 61.47, $p < .001$). Contamination fear negatively affected well-being ($b = -.29$, 95% C.I. [-.38,-.20], $t = -6.28$, $p < 0.001$); interaction between contamination fear and ADL was significant ($b = .06$, 95% C.I. [.03, .08], $p < 0.001$) and that between contamination fear and multimorbidity was also significant ($b = .02$, 95% C.I. [.001, .05], $p = 0.04$). Thus, both ADL and multimorbidity moderated the relationship between contamination fear and well-being. In the second analysis, the overall model explained 16.8% of the variance in primary healthcare visits (F [5, 437] = 17.65, $p < .001$); fear of contamination negatively affected primary healthcare visits ($b = -.11$, 95% C.I. [-.16,-.05], $t = -3.74$, $p = .0002$); the interaction between contamination fear and ADL was significant ($b = .018$, 95% C.I. [.0005, .035], $p < 0.043$); finally, the interaction between contamination fear and multimorbidity was also significant ($b = .02$, 95% C.I. [.003, .03], $p = 0.02$). Thus, both ADL and multimorbidity moderated the relationship between contamination fear and primary healthcare visits.

Discussion

This study was conducted to investigate older adults' fear of contamination in relation to the COVID-19 pandemic, the factors that predict it, and its effects on well-being and the use of primary healthcare, assessing moderating effect of ADL and multimorbidity in the post-COVID-19 era. The state of global pandemic, which might now be the norm, negatively affects individuals not merely at the height of the pandemic but also in the post-pandemic era[69]; thus, our study can help in understanding the impact of contamination fear on older adults with chronic diseases. The study findings demonstrated that contamination fear among older adults with chronic diseases is high

Table 2
Factors predict fear of contamination ($n = 444$).

Characteristics	Unstandardized coefficients		Standardized coefficients		95% Confidence Interval (CI)
	B	**SE**	**β**	**P**	
Age	-.16	.072	-.10	.027	-.30 − -.02
Gender	3.608	.914	.19	<.001	1.81 − 5.40
Education	1.17	.35	.15	<.001	.477 − 1.87
Having COVID-19 previously	-2.39	.93	-.12	.011	-4.22 − -.56
ADLs	.77	.21	.19	.<001	.36 − 1.17
Multimorbidity	.17	.27	.04	.466	-.28 − .61

in comparison with other samples, such as university students[18] and general population.[70] This suggests that the fear contamination related to COVID-19 continues among older adults in the post-pandemic era. Although fear is an expected and normal reaction to a viral outbreak,[71] extreme and prolonged fear can be an unhealthy reaction. A high level of contamination fear could reflect older adults' perception of features of the COVID-19 virus, including easy transmissibility, uncertainty, ambiguity of prognosis and treatment, severity of illness, and mortality risk.[72] It could also reflect the cultural background of this study sample and the period of data collection, that is, when the number of confirmed cases in Saudi Arabia was on a rise. This high level of fear requires further assessment and focus on older adults' perceptions and public education regarding this issue.

This study found that older adults' background characteristics, including age, education level, gender, ADL, and previous COVID-19 infection uniquely predict fear of contamination. In general, studies examining the efficacy of using older adults' background characteristics to predict contamination fear related to COVID-19 are lacking, which limits comparisons with existing literature. The literature highlights gender as an important factor, indicating that women tend to report higher contamination fear,[17,19,34,35] which is consistent with our findings. In our study, age is negatively associated with contamination fear, and while this finding aligns with some studies,[35,73] it contradicts a previous study finding that fear of COVID-19 increases with age[19]; notably, the latter study was not conducted with older adults. Increasing age among older adults could lower the use of media, which could minimize fear level. In addition, education is associated with contamination fear, as higher education level is associated with increased fear of contamination in our study; however, a previous study with a general population demonstrated that individuals with higher education level had lower fear of contamination related to COVID-19.[35] In our analysis, we considered the unique effect of education, controlling for other characteristics, suggesting that older adults with higher education might be regularly exposed to social media and news, which might increase fear.[30] We found previous COVID-19 infection to predict contamination fear in that not having been infected elicited higher fear. This finding can be explained by familiarity. Individuals having experienced COVID-19 infection were less afraid of future contamination. Our study also demonstrated that higher ADL functioning was associated with higher fear of contamination. This could be related to the fact that older adults who are self-reliant were capable of venturing outdoors more and perceived their risk of contamination as higher. Notably, previous studies have not examined this relationship. As our study showed that older adults' background characteristics can predict contamination fear, nurses, other healthcare providers, and policymakers must effectively assess and navigate this issue of fear according to these characteristics.

Our study demonstrated that contamination fear negatively affected the subjective well-being and number of primary healthcare visits of older adults in Saudi Arabia in the post-COVID-19 era, and both ADL and multimorbidity moderated these relationships. This indicates that strong contamination fear affects well-being and primary healthcare visits depending on the level of ADL and multimorbidity. In terms of well-being, the findings align with the expected negative effect of COVID-19 on older adults' subjective well-being, as predicted by the WHO[74] and other studies identifying a negative effect of worry related to COVID-19[75] and the effect of avoidance[76] on well-being. The detrimental effect of contamination fear on older adults' well-being requires attention. Subjective well-being, concerning happiness, satisfaction with life, and positive emotions,[77] is a crucial aspect of older adults' lives. Contamination fear could result in avoiding socialization and contact with others, which could negatively affect perceived well-being. Similarly, our findings indicated

that older adults with higher contamination fear engaged in less primary healthcare visits. The literature has suggested a general decline in the use of primary health visits during the COVID-19 pandemic,[78] and our findings confirmed that contamination fear predicts primary healthcare use. Older adults' usage of health services as follow up for chronic diseases is crucial in protecting them from morbidity and mortality,[38] promoting health, empowering them to manage conditions, and reducing the use of emergency services.[79]

Our study highlighted the role of ADL and multimorbidity on the effect of contamination fear on well-being and primary healthcare visits. The extent of influence of contamination fear on well-being and primary healthcare visits differed based on ADL and multimorbidity levels. Poor physical functioning and multimorbidity were shown to increase the negative effect of contamination fear on well-being and number of primary healthcare visits. To our knowledge, this is the first study to examine the moderating effect of ADL and multimorbidity between contamination fear and well-being and between contamination fear and primary healthcare visits. Our findings can be explained by the existing studies showing that older adults' ADL level[43,80] and multimorbidity[81] are relevant to well-being. In addition, previous studies demonstrated that ADL[41] and levels of multimorbidity[82,83] lead to unique patterns of healthcare access, including primary healthcare services,[82] suggesting that older adults with poor ADL and multimorbidity could be more negatively affected by contamination fear.

Although the study offers an important contribution, some limitations should be highlighted. First, using a convenience sample of older adults could limit the generalizability of the study, but recruiting from 25 primary healthcare centers located in different neighborhoods in three regions could enhance the generalizability. Further studies could consider using random sampling in different settings. The use of cross-sectional design hinders the ability to infer causal relationships. Most participants were women because the data were primarily collected in the female section of primary healthcare centers owing to issues of accessibility.

Conclusion

This study was among the first to look at contamination fear in the post-COVID-19 era and its effect on well-being and primary healthcare visits among older adults with chronic diseases in Saudi Arabia, demonstrating the level of contamination fear and its negative effects. Older adults' well-being and primary healthcare visits are affected by contamination fear and this effect is based on both ADL and multimorbidity levels. The fear resulting from the pandemic may continue for a long period. Given that older adults are more vulnerable to COVID-19, contamination fear should receive exceptional consideration. Older adults' well-being and regular visits to primary healthcare are crucial considerations throughout the aging process; thus, nurses should emphasize awareness of such contamination fear. Our study has significant health implications. Health intervention programs should be tailored for older adults to reduce contamination fear related to the pandemic and its negative impact. Developing and implementing strategies to reduce contamination fear among older adults in clinical and community settings is essential.

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